

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1

3

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 07/13/2012		2. CONTRACT NO. (If any) EP-BPA-12-H-0031		6. SHIP TO:	
3. ORDER NO.		4. REQUISITION/REFERENCE NO.		a. NAME OF CONSIGNEE Indicated on call	
5. ISSUING OFFICE (Address correspondence to) HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460				b. STREET ADDRESS	
				c. CITY	e. ZIP CODE
7. TO: DICKRAN BABIGIAN				f. SHIP VIA	
a. NAME OF CONTRACTOR EASTERN RESEARCH GROUP, INC.				8. TYPE OF ORDER	
b. COMPANY NAME				<input type="checkbox"/> a. PURCHASE REFERENCE YOUR: <input type="checkbox"/> b. DELIVERY Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
c. STREET ADDRESS 110 HARTWELL AVENUE 7816747200				Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.	
d. CITY LEXINGTON		e. STATE MA	f. ZIP CODE 024213136		
9. ACCOUNTING AND APPROPRIATION DATA Indicated on call				10. REQUISITIONING OFFICE OAR	

11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input type="checkbox"/> a. SMALL <input checked="" type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOMEN-OWNED SMALL BUSINESS PROGRAM <input type="checkbox"/> h. ECONOMICALLY DISADVANTAGED WOMEN-OWNED SMALL BUSINESS (EDWOSB)				12. F.O.B. POINT Destination	
13. PLACE OF a. INSPECTION Destination		b. ACCEPTANCE Destination		14. GOVERNMENT B/L NO.	
				15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) Indicated on call	
				16. DISCOUNT TERMS Indicated on call	

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	GSA Contract #: GS-23F-0225M DUNS Number: (b)(4) Blanket Purchase Agreement Terms: Five Year Maximum Ordering Ceiling for this BPA from schedule 871 (all SINS): Continued ...					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
	21. MAIL INVOICE TO:						
	a. NAME Indicated on call						\$0.00
	b. STREET ADDRESS (or P.O. Box)						\$0.00
c. CITY				d. STATE	e. ZIP CODE		

22. UNITED STATES OF AMERICA BY (Signature)

23. NAME (Typed)
Margaret Kline
TITLE: CONTRACTING/ORDERING OFFICER

ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION

PAGE NO
2

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DATE OF ORDER 07/13/2012	CONTRACT NO. EP-BPA-12-H-0031	ORDER NO.
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	<p>\$8,633,510. Effective date 7/16/2012-7/15/2017.</p> <p>Per the GSA Federal Supply Schedule Contract Number GS-23F-0225M and Federal Acquisition Regulation (FAR) 8.405-3, Blanket Purchase Agreements (BPAs), the Contractor agrees to the following terms of a BPA EXCLUSIVELY WITH The United States Environmental Protection Agency (EPA):</p> <p>1. The contract services specified in Attachment 1: Statement of Work can be ordered under this BPA. Orders placed against this BPA shall be Time and Materials orders and are subject to the terms and conditions of the contract. Per the EPAAR clause 1552-232-73 "Payments-fixed-rate services contract" the 5% funds withholding on invoices will not be employed unless indicated on a task order.</p> <p>2. Delivery: Shall be specified on individual orders.</p> <p>3. This BPA does not obligate any funds.</p> <p>4. This BPA expires on July 15, 2017 or at the end of the contract period, whichever is earlier.</p> <p>5. The following office(s) is authorized to place orders under this BPA: Climate Change Division</p> <p>6. Orders will be placed against this BPA via electronic mail, FAX, paper or oral communications. Generally most orders will be placed using electronic mail (email).</p> <p>7. The terms and conditions included in this BPA apply to all purchases made under it. In the event of an inconsistency between the provisions of this BPA and the Contractor's invoice, the provisions of this BPA will take precedence. Continued ...</p>					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$0.00

ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION

PAGE NO
3

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 07/13/2012	CONTRACT NO. EP-BPA-12-H-0031	ORDER NO.
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	<p>Invoicing Procedures:</p> <p>Invoices shall be submitted via e-mail to RTPReceiving@epa.gov</p> <p>The naming scheme for invoice submission will be provided to you after a task order is awarded.</p> <p>For status of invoice payments, call the Financial Office's Customer Service at (919) 541-0616.</p> <p>The FedEx/commercial courier address for invoices: US EPA, RTP-Finance (Mail Drop D143-02) 4930 Page Road Durham, NC 27703</p> <p>The following attachments are incorporated into this Blanket Purchase Agreement:</p> <p>Attachment 1: Statement of Work Attachment 2: Pricing Schedule Attachment 3: Ordering Procedures Attachment 4: Additional Provisions and Clauses</p> <p>Admin Office: HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460</p> <p>Period of Performance: 07/16/2012 to 07/15/2017</p>					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$0.00

Attachment 1
STATEMENT OF WORK
AgSTAR

1.0. SCOPE

1.0.1. This scope of work is organized into the following sections:

Background

This section briefly describes the program's background and the specific nature of the work required under these contracts.

Areas of Work

This section provides a description of the work areas covered under this SOW. These include:

1. Market, Policy, Legal, and Regulatory Assessment Support
2. Project Development and Implementation Support
3. Technical and Analytical Support
4. Technology Transfer Support
5. Outreach Support
6. Tracking Support
7. Methane Emission Inventories Support

1.0.2. Statutory Authority and Reference Documents

Clean Air Act Amendments of 1990, Section 603

Reports to Congress required by Clean Air Act:

- o *Anthropogenic Methane Emissions in the United States: Estimates for 1990*, EPA 430-R-93-003, April 1993
- o *Options for Reducing Methane Emissions Internationally, Volume I: Technological Options for Reducing Methane Emissions*, EPA 430-R-93-006, July 1993
- o *Opportunities to Reduce Anthropogenic Methane Emissions in the United States*, EPA 430-R-93-012, October 1993
- o *Options for Reducing Methane Emissions Internationally, Volume II: International Opportunities for Reducing Methane Emissions*, EPA 430-R-93-006B, October 1993
- o *US Climate Change Action Plan*, 1993

Inventory of US Greenhouse Gas Emissions and Sinks (1990 – 2006). April 2008.

http://www.epa.gov/climatechange/emissions/downloads/08_CR.pdf

2009 Draft US Greenhouse Inventory Report.

<http://www.epa.gov/climatechange/emissions/usinventoryreport.html>

AgSTAR and Global Methane Initiative Agriculture Subcommittee Documents:

To obtain reference information and copies of AgSTAR and Global Methane Initiative reports and publications cited in this SOW, review the AgSTAR home page at www.epa.gov/agstar and the Global Methane Initiative Agriculture Sector webpage at www.globalmethane.org/agriculture

Examples of relevant documents include:

- o Got Manure? Want energy? We can help!"
- o AgSTAR Handbook: A Manual for Developing Biogas Systems at Commercial Farms in the United States and FarmWare (software included in Handbook)
- o US Anaerobic Digester Status Report
- o Market Opportunities for Biogas Recovery Systems at US Livestock Facilities Report
- o Anaerobic Digestion Capital Costs for Dairy Farms
- o Industry Directory for On-Farm Biogas Recovery Systems
- o Federal Incentives for Developing Anaerobic Digester Systems
- o 2010 Update on Anaerobic Digester Systems
- o Anaerobic Digester Database
- o Protocol for Quantifying and Reporting the Performance of Anaerobic Digestion Systems for Livestock Manures
- o International Guidance for Quantifying and Reporting the Performance of Anaerobic Digestion Systems for Livestock Manures
- o Resource Assessment for Livestock and Agro-Industrial Wastes: various countries

1.1. BACKGROUND

1.1.1. Greenhouse Gases, Climate Change and the Importance of Mitigation

Changing the climate of the earth through the build-up of an array of radiatively active trace gases may have a number of adverse effects on the earth's environment, world economies, and world health. The Environmental Protection Agency's (EPA's) Climate Change Division (CCD) initiates programs to support commercialization of technologies and practices that will make systems more efficient, reduce emissions of these potent greenhouse gases, and thereby reduce the future risks of climate change.

Methane is a large contributor to potential global warming, second only to carbon dioxide. Methane is a potent greenhouse gas over 20 times more effective, per unit mass, at trapping heat in the atmosphere than carbon dioxide (CO₂) over a one-hundred year period. Furthermore, methane's concentration in the atmosphere is changing at a rapid rate, more than doubling over the last two centuries and continuing to rise annually. These increases are largely due to increasing emissions from anthropogenic sources; more than 60 percent of total methane emissions are related to human activities.

1.1.2. Methane Mitigation and Recovery from Agriculture and Wastewater

Livestock Wastes

Livestock waste management practices are estimated to contribute approximately five percent of global methane emissions from anthropogenic sources. US livestock manure management practices are estimated to emit about three million metric tons of methane and account for approximately ten percent of US methane emissions. Confined swine and dairy production facilities account for the majority of these emissions. Livestock and agro-industrial waste is also a source of pollution in surface and ground waters. Water pollution potential from these sources include: chemical and biological oxygen demand, nutrients, pathogens, and metals. These pollutants are found in various forms and concentration in the effluent and solids fractions of the waste stream. Water pollution events are of growing concern in areas where there are high concentrations of livestock production without adequate waste management planning or appropriate guidance on how pollution can be mitigated from these types of facilities. A large part of this problem occurs because livestock wastes are not land applied based on principles of nutrient management planning. Additionally, in many cases, wastes are allowed to be

discharged (directly or indirectly) to surface waters, which causes high nutrient and organic loadings in the affected watersheds.

Methane mitigation from livestock wastes is focused on biogas recovery systems. A biogas recovery system usually includes an anaerobic digester that captures and combusts biogas to produce electricity, heat, or hot water. Biogas recovery systems are effective at confined livestock facilities that handle manure as liquids and slurries, typically swine and dairy farms, as well as agro-industrial facilities that manage wastewaters with high organic content. Anaerobic digester technologies provide enhanced environmental and financial performance when compared to traditional waste management systems such as manure storages and lagoons. Anaerobic digesters are particularly effective in reducing methane emissions, but also provide other air and water pollution control opportunities due to the controlled retention of the effluent. Secondary and tertiary treatment methods, as well as nutrient management plans, are complements to the anaerobic digester that address air and water pollution concerns from the effluent.

Besides traditional anaerobic digestion of liquids/slurries with less than 15 percent total solids, "dry" digestion is also emerging as a treatment method for livestock wastes with total solids contents between 15 and 45 percent. Other emerging technologies include combustion, pyrolysis, and gasification. Combustion is the thermal conversion of organic matter with an oxidant (normally oxygen) to produce primarily carbon dioxide and water, when the oxidant is in stoichiometric excess. Pyrolysis is the thermal conversion (destruction) of organics in the absence of oxygen. In the biomass community, this commonly refers to lower temperature thermal processes producing liquids as the primary product, with a possibility of producing chemical and food byproducts. Gasification is the thermal conversion of organic materials at elevated temperature and reducing conditions to produce primarily permanent gases, with char, water, and condensibles as minor product. These technologies have the potential to increase the amount of methane that can be captured from traditional livestock waste management methods, but have not been widely commercialized in this subsector in the US.

Enteric Fermentation

Methane is also emitted from other agricultural sources. Methane is produced as part of the normal digestive process in animals. During digestion, microbes present in an animal's digestive system ferment food consumed by the animal. This microbial fermentation process is referred to as enteric fermentation and produces methane as a by-product, which can be exhaled or eructated by the animal. The amount of methane produced and excreted by an animal depends primarily on the animal's digestive system and the amount and type of feed it consumes. Because methane emissions represent an economic loss to the farmer, where feed is converted to methane rather than to product output, viable mitigation options can entail feed efficiency improvements to reduce methane emissions. Enteric methane emissions from livestock are estimated to be the second largest source of global agricultural non-CO₂. In 2000, global enteric methane emissions accounted for 32 percent of global agricultural non-CO₂ emissions. In the United States, enteric methane accounts for 27 percent of agricultural non-CO₂ and less than 2 percent of all greenhouse gas emissions. Four major categories of mitigation options for enteric methane are (1) improvements to food conversion efficiency by increasing energy content and digestibility of feed, (2) increased animal productivity through the use of natural or synthetic compounds that enhance animal growth and/or lactation, (3) feed supplementation to combat nutrient deficiencies that prevent animals from optimally using the potential energy available in their feed, and (4) changes in herd management (e.g., use of intensive grazing). However, some of the mitigation options for enteric fermentation may actually increase net greenhouse gas emissions per animal but lead to an even larger increase in productivity, thereby decreasing emissions per unit of meat or milk produced.

Rice Cultivation

Another major source of methane emissions from agriculture comes from rice cultivation. Most rice in Asia and the rest of the world is grown in flooded paddy fields. When fields are flooded, decomposition of organic material gradually depletes the oxygen present in the soil and floodwater, causing anaerobic conditions in the soil to develop. Anaerobic decomposition of soil organic matter by methanogenic bacteria generates methane. The methane is oxidized by aerobic methanogenic bacteria in the soil, leached away as dissolved methane in floodwater that percolates from the field, transported (unoxidized) from the soil to the atmosphere, and/or released from the soil via diffusion and bubbling through floodwaters. Therefore, the water management system under which the rice is grown is one of the most important factors affecting methane emissions. The amount of available carbon susceptible to decomposition is also critical. Some practices that reduce methane increase N_2O emissions since methane and N_2O are produced during different stages of soil redox potential fluctuations. Other practices that alter soil environmental conditions and therefore soil carbon- and nitrogen-driving processes include tillage, fertilization, manure amendments, changes in soil temperature and changes in crop yield and litter. Examples of methane mitigation options from rice cultivation include full midseason drainage, shallow flooding, off-season straw, ammonium sulfate additions, slow-release fertilizer application, and upland rice replacement of paddy rice management. Rice cultivation contributes to about 11 percent of global methane emissions.

Wastewater

Worldwide, wastewater is the fifth largest source of anthropogenic methane emissions, contributing about nine percent of total global methane emissions in 2000. Global methane emissions from wastewater are expected to grow by approximately 20 percent between 2005 and 2020. Wastewater from domestic (sewage) and industrial sources is typically moved through a wastewater sewer system to a centralized wastewater management treatment center. Industries producing large volumes of wastewater with high levels of organic matter are likely to have significant methane emissions. They also tend to employ either shallow lagoons or settling ponds in their treatment of wastewater, which promotes anaerobic degradation. Besides the pulp and paper industries, typical industrial sub-sectors include palm oil, fruit processing, distillery, winery, sugar, slaughterhouse, and other similar high strength organic wastes.

At a wastewater treatment center, soluble organic material, suspended solids, pathogenic organisms, and chemical contaminants are removed from water using biological processes in which microorganisms consume the organic wastes. This results in the production of biomass sludge. The microorganisms can perform this biodegradation process in aerobic and anaerobic environments, of which the latter produces methane. Methane is produced by decay of organic material in wastewater as it decomposes in anaerobic environments. Methane emissions are determined by the amount of organic material produced and the extent to which this material is allowed to decompose under anaerobic conditions. Most developed countries use centralized aerobic wastewater treatment facilities with closed anaerobic sludge digester systems to process municipal and industrial wastewater. Employment of these practices increases methane generation but ultimately reduces baseline emissions. Wastewater production is directly related to a country's domestic population and industrial production of select industries. Population growth rates are traditionally higher in developing countries while more industrialized countries have recently tended to experience smaller increases in population over time. Along with population growth, wastewater trends have seen increasing amounts of organic material, which can result from various economic improvements.

Once municipal infrastructure is in place, there are two major approaches to reducing methane emissions from wastewater: (1) improved wastewater treatment practices that reduce the amount of organic waste anaerobically digested (through improved aeration and/or the

scaling back of the use of stagnant settling lagoons) and (2) anaerobic digestion with collection and flaring or cogeneration. The primary factor for determining methane emissions from the wastewater sector is the type of treatment system employed to manage the waste. Centralized, managed treatment facilities can control anaerobic environments and have a greater potential to capture and use methane. Because most centralized systems automatically either flare or capture and use methane for safety reasons, "add-on" abate options do not exist. As a result, potential emission reductions depend on large-scale structural changes in waste management practices. In contrast, smaller decentralized systems have less control over the share of aerobic versus anaerobic decomposition and have fewer feasible options for capturing methane.

1.1.2. US EPA Agricultural Methane Outreach Programs

EPA works to reduce methane emissions from agricultural and wastewater sources domestically through the AgSTAR program and internationally through the Global Methane Initiative.

AgSTAR

AgSTAR is a voluntary outreach and partnership program designed to reduce livestock-generated methane emissions and achieve other air and water quality benefits by promoting commercially demonstrated technologies that treat and stabilize waste streams and combust off gases generated from anaerobic processes.

AgSTAR provides an array of information and tools designed to assist producers in the evaluation and implementation of biogas recovery systems, including:

- Conducting farm digester extension events and conferences
- Providing "How-To" project development tools and industry listings
- Conducting performance characterizations for digesters and conventional waste management systems
- Providing farm recognition for voluntary environmental initiatives
- Collaborating with federal and state renewable energy, agricultural, and environmental programs

AgSTAR has focused to date on traditional anaerobic digester technologies (covered lagoons, plug flow digesters and complete mix digesters) but may expand to promote other technologies that would decrease methane emissions as well. Additionally, the benefits and challenges of the different technologies compared to anaerobic digestion should always be considered.

Global Methane Initiative

The Global Methane Initiative (GMI) is a multi-lateral program designed to reduce methane emissions from agricultural, industrial, and domestic wastewaters, among other sectors. Methane reducing practices provide renewable energy, improve the environment, provide human health benefits, and enhance rural economic development. Development of environmentally sound practices in the agricultural sector will entail a number of activities, approaches, and strategies as these emissions are generated from an array of smaller decentralized facilities located in various climates and economies when compared to fewer but larger centralized sources such as landfills, coal mines, or natural gas systems. The primary global sources of methane emissions from agriculture are livestock enteric fermentation, livestock waste management, rice cultivation, and agricultural waste burning. Of these, livestock waste management offers the most viable, near-term opportunities for methane recovery and utilization, which is where most of the Initiative's agricultural activities are focused. GMI has been focused on livestock wastes and agro-industrial wastewaters since 2005. However, the areas of rice cultivation, enteric fermentation, and domestic wastewater have recently taken on greater significance. The Agriculture Sub-Committee oversees activities for the abatement and mitigation of methane

emissions from agricultural and agro-industrial sources. The newly established Wastewater Sub-Committee will take the lead on activities related to methane reductions from domestic wastewater; however some of this work continues in conjunction with agricultural sector activities since the mitigation technologies are often the same for wastewater regardless of source.

EPA's approach to international agricultural methane projects builds off of the experience, tools and resources developed in its domestic work, yet differs in a few important ways. Because technical, social and market barriers can be significant, and existing technical capacity may be little or non-existent, EPA's approach has focused on market assessment and capacity building, in addition to its technical services. There is a large focus on assessing the potential for methane emissions reductions from various agricultural and wastewater subsectors in each country, as well as the capacity for promoting biogas recovery projects. There is increased emphasis on technology demonstration, institutional strength, effective policies and transfer/replication strategies in the international work.

GMI activities are implemented in various countries with a wide range of project sites (farm, industry, or sewage plant types) and levels of economic development. Critical elements of this work are: (1) development of affordable, and in some cases, novel technologies, from indigenous resources (where possible) that result in broader replication of systems; (2) integration of technical and scientific components into national institutions and agencies responsible for agriculture, wastewater, energy, development, pollution control, and human health; and (3) expansion of critical materials, equipment and services into the global marketplace for methane mitigation and recovery technologies. The work provides a firm scientific and technical basis that characterizes process performance to identify waste management and pollution control strategies relative to costs. Moreover, it can provide core data on which project tools can be developed and national technical standards and policies can be based. A key to this work is being able to establish effective national and local public and private sector connections to expand deployment of appropriate technologies, practices, and policies.

Domestic wastewater sector activities will encompass both rural and urban wastewaters and associated practices. Industrial wastewater sectors vary in sophistication among the GMI partner countries. Rice cultivation and enteric fermentation projects are expected to follow a similar route of: concept to research and development to pilot to pre-commercial to commercial phases as the livestock and agro-industrial wastewater projects undergo.

For purposes of this Statement of Work, "methane mitigation and recovery projects" shall refer to projects reducing, capturing, and/or recovering biogas from the agricultural and wastewater subsectors. Approximately one-half to two-thirds of the work shall involve international activities.

1.2. AREAS OF WORK

This Scope of Work entails a set of activities that are necessary to assist the Government in the continued development of methane mitigation and recovery projects in the identified subsectors, both domestically and internationally.

The contractor shall be prepared to conduct the work specified below in the US and internationally, if appropriate and authorized. The contractor shall furnish the necessary

personnel, material, equipment, services and facilities (except as otherwise specified) to perform the Areas of Work as follows:

1.2.1. Market, Policy, Legal, and Regulatory Assessment Support

Market Evaluations

The contractor shall assist the Government in developing market assessments of the potential for methane mitigation and recovery projects in select localities, regions, states and/or countries. This assistance may include evaluating the potential methane mitigation from various subsectors and related energy generation potential. The contractor will also assist the Government in developing strategies that identify specific financial and policy barriers to methane mitigation and recovery projects while proposing strategies and methods for addressing these barriers. These reports may also involve the evaluation of comparative risk of methane mitigation and recovery projects; evaluations of the benefits of methane mitigation and recovery projects; developing detailed estimates of potential future commodity supplies and demand as well as potential future prices (including carbon pricing) and potential future competition in various markets; assessments of carbon markets (both voluntary and compliance) in the US and internationally and their impact on methane mitigation and recovery projects both specifically and generally; evaluating potential markets for the methane recovered in these projects, including markets for electricity, heat, medium and high btu gas, alternative fuels, and chemical feedstocks; and evaluating potential markets for value-added products recovered from the solid and liquid effluent streams post-anaerobic digestion or other practices.

Evaluations of Policy, Legal, and Regulatory Actions

This assistance may also include conducting evaluations of US and international Global Methane Initiative government actions (past, present, and future) related to methane mitigation and recovery, including ownership issues, offset programs (voluntary and regulatory), environmental attributes, carbon markets, tax credits, environmental permits, etc. These evaluations may include detailed analysis of government and industry policy, tax policy, climate and air quality legislative actions, emissions regulations, statistics, utility and business practices, industry, market and government trends, legal settlements, technologies and other topics pertaining to methane mitigation and recovery project development, both domestically and internationally. This assistance may include developing, for EPA review and approval, outreach materials communicating the results of these analyses. These materials may include reports, technical documentation, and other written materials, and/or multimedia materials. These outreach materials may be targeted to any number of varying audiences, both internal and external to the Government.

1.2.2. Project Development and Implementation Support

The contractor shall assist the Government in preparing analyses and assessments of methane mitigation and recovery project opportunities, technologies, and end uses to facilitate EPA development and implementation of projects in the US and other GMI partner countries. Assessments shall encompass subsectors both with and without significant experience in methane mitigation, recovery, and use, and shall also consider commercially available as well as new and emerging technologies.

Specific elements of these evaluations and assessments may include the following:

Gas recovery technology evaluations

The contractor shall assess the applicability of technologies and techniques for methane mitigation and recovery at different operations; analyzing the potential to adapt existing technologies for application at specific sites; assessing the economics and the applicability of available technologies and techniques for maximizing the recovery of biogas for a variety of uses; and evaluating the full range of technical issues related to expanding the mitigation and/or recovery of methane from various operations at specific sites or specific regions and countries. The contractor shall also assess related components of the gas recovery technology, such as construction techniques, local resources available for such projects, or novel applications of existing technologies.

End-use technology evaluations

The contractor shall assess the applicability of existing and emerging technologies for the use of methane recovered in a variety of ways including thermal applications, electricity, fuel, etc.; and evaluating the full range of technical, policy, and market issues related to expanding the use of biogas at sites or in specific regions and countries.

Biogas recovery system performance evaluations

The contractor shall assess the performance of existing methane mitigation and recovery projects using applicable protocols, such as the *Protocol for Quantifying and Reporting the Performance of Anaerobic Digestion Systems for Livestock Manures* and the *International Guidance for Quantifying and Reporting the Performance of Anaerobic Digestion Systems for Livestock Manures*. The objective of these evaluations is to verify the performance and validity of technology claims related to environmental performance and cost. The contractor shall provide support to the overall evaluation including, but not limited to, experimental design, sampling method, data integrity, reporting reliability, problem resolution, analytic approach, and reporting validity in a standardized format. If new protocols are needed, the contractor shall assemble such protocols using a peer-review process.

Emissions measurements evaluations

The contractor shall evaluate the appropriate reduction calculation methodologies and carbon reduction credit methodologies, such as those promulgated by the IPCC that should be used by a particular site or type of project. The contractor shall assess the baseline emissions coming from a site and associated reductions and carbon credits that could be or are realized from the implementation of various mitigation technologies or techniques.

Effluent management evaluations

The contractor shall assess various secondary and tertiary treatment components that can be coupled with methane capture practices in order to further reduce negative impacts of nutrients on surface and ground water, such as various forms of nitrogen and phosphorus, and/or of air emissions of other gases and contaminants, such as nitrous oxide, ammonia, VOCs, hydrogen sulfide and NOx/SOx. Besides treatment, the contractor shall also evaluate the impact of the final uses of treated effluent whether land applied, sold as another product, etc. The contractor shall evaluate which practices are applicable for various sites according to technical and economic feasibility and the specific reductions that can be achieved on a project or wide-scale basis.

Project identification

The contractor shall identify potential opportunities for methane mitigation and recovery and projects in the US and GMI partner countries. These could include the following activities:

- o Identifying opportunities for specific projects in the US or other countries;
- o Updating the *Market Opportunities for Biogas Recovery Systems* in the US, including expansion to additional subsectors; and

- o Identifying project opportunities in GMI partner countries that could be showcased at events such as the Partnership Expo. This effort involves preliminary data collection, elementary technical and economic analyses, and preparation of graphical information displays.

Development of feasibility assessments

The contractor shall assist the Government in developing technical and/or economic feasibility assessments for potential methane mitigation and recovery projects at selected sites. This assistance may include evaluating site-specific conditions and identifying sites with strong potential to cost-effectively recover methane suitable for use. This assistance may also include developing criteria for comparing the feasibility of possible projects at a site and selecting the most promising project type.

Project assessments typically begin with the estimation of methane mitigation or recovery potential at the site and a preliminary technical assessment (e.g., use of FarmWare or international models). If the site is determined to be a candidate, activities that may be undertaken include identification of potential project development barriers (e.g., technical, policy, financial, legal), and undertaking an economic feasibility assessment to examine end-use options and financing scenarios. Finally, other technical assistance and outreach support (e.g., promotion) may be involved. Site visits may be necessary to conduct feasibility assessments.

Economic and financial feasibility assessments for potential methane mitigation and recovery projects at selected sites may include evaluating project economics and financing requirements, including developing detailed estimates of project costs (e.g., capital and labor) and potential revenues; developing economic and financial comparisons between potential project types at specific sites and defining and applying criteria for selecting the most promising projects; and evaluating the impact of such factors as potential trends in energy prices, carbon pricing, access to investment capital, interest rates, tax policies, and economic/financial risks on a potential project's feasibility.

1.2.3. Technical and Analytical Support

The contractor shall assist the Government in providing technical support and analyses to promote methane mitigation and recovery in the US and internationally. This shall include, but is not limited to, support for feasibility assessment tools, financial model and other analytical tool development; technical analyses of biogas recovery systems; and development of sector-specific methodologies.

Support for technical and economic feasibility models and other analytical tool development and maintenance

EPA has developed software, FarmWare, to evaluate basic technical and economic analyses of US livestock biogas recovery projects. FarmWare is available on the AgSTAR website at: <http://www.epa.gov/agstar/tools/project-dev/farmware.html>. The contractor shall assist in the further development and refinement of this model or a similar model by providing technical and cost data to support development of new modules; updating cost and technology elements of the model as needed; and adapting the model to international conditions. The contractor shall recommend appropriate software for dissemination of the tool, such as Excel or a custom program. The contractor shall also provide EPA with the expertise to develop other analytical tools as appropriate. *Technical analyses related to methane mitigation, recovery, and utilization*

The contractor shall provide support for further development and updates for EPA's technical reports and efforts dealing with methane mitigation, recovery, and utilization. These efforts may include reviewing, updating, enhancing, or disseminating current EPA documents globally.

Development of sector-specific methodologies

The contractor shall assist in developing guidance for green house gas inventories (GHG) for government agencies or non-governmental organizations, or for corporate or facility level inventories as well as emissions or emissions reductions from specific projects. The contractor shall assist in the development of guidance on methodologies for estimating direct GHG emissions reductions from mitigation or energy recovery activities, as well as investigate, develop, review, or critique guidance or methods for GHG emissions monitoring, reporting, and verification.

Development of international analyses and reports

In support of the Global Methane Initiative, the contractor shall provide updated information about global methane projects, opportunities, developments, technologies, and legal/regulatory policies. The contractor shall assist in updating or developing new technical and informational reports.

1.2.4. Technology Transfer Support

The contractor shall assist the Government by identifying cost-effective opportunities to abate and recover methane in the US and internationally by supporting the deployment of best management practices, as well as supporting the development of potential financing mechanisms to encourage investment. The work to facilitate deployment and adoption of appropriate technologies and practices should support the long-term goal of developing the necessary technical, agronomic, policy, and financing elements needed to sustain market development in specific countries. Possible activities include technology demonstration projects, workshops, training, study tours, and support for international clearinghouses, as described below:

Technology demonstration projects

The contractor shall provide technical and analytical support for technology demonstration projects in the US and internationally. These projects may involve demonstrations of any or all parts of a methane mitigation or recovery system, treatment and final use or disposal of gas and liquid and solid effluent portions. This support may include site-specific engineering design, fabrication, installation and start-up assistance, trouble-shooting, operator training, data collection and monitoring, research, data analysis, and development of technical papers. Demonstration projects may require the purchase and installation of equipment, either for system operation, such as tanks or flares, or for evaluation, such as gas meters. The contractor shall focus on technologies that are affordable, replicable, serviceable, and appropriate for the sub-sector and climate targeted.

Technical Workshops

Rural agricultural development is a long-term, complicated objective that requires a tailored extension and educational component. A typical extension event shall consist of, but is not limited to the following topic areas: technology performance, project development, financing programs, technical assistance, policy, and science. The contractor shall organize and conduct extension or other educational workshops (in any of the identified subsectors) as needed on

specific topics to share technical information and experiences related to methane mitigation and recovery project development for US or international audiences consisting of members of the livestock industry, renewable energy organizations and businesses, pollution control organizations, and/or others. Elements of this activity include development of an agenda, identification of appropriate speakers / presenters, preparation and delivery of presentations, and logistical elements associated with implementing the workshop (site arrangements, registration, materials, proceedings, etc.).

Technical Training

The contractor shall organize and conduct training sessions for US or international delegations. These training sessions may include classroom sessions as well as visits to one or more sites, as appropriate. Elements of this activity include development of an itinerary/agenda, identification of appropriate persons to conduct the training, preparation and delivery of the training, and logistical elements associated with implementing the training (arranging any transportation needed during the training, such as buses, and other travel logistics (but not funding individual travel to and from the training), site arrangements, materials, etc.).

1.2.5. Outreach Support

The contractor shall assist the Government in providing outreach support for activities in the US and internationally to a diverse audience comprised of executive, technical, academic and other individuals important in the development of methane mitigation and recovery projects. The contractor shall be prepared to undertake outreach activities for the program including development of outreach materials, program summaries and fact sheets, public education materials, and technical outreach materials targeted at specific industry and interest groups. The contractor shall be prepared to use a variety of media in disseminating outreach materials. Examples of this support include:

Contributing content

The contractor shall develop articles, ideas, graphics, and analyses and other content to program updates such as the *AgSTAR Digest* (a newsletter published quarterly that is emailed to AgSTAR listserv contacts) or *Methane International*; email updates; and material for the AgSTAR and GMI websites. (www.epa.gov/agstar) (www.globalmethane.org). The EPA COR will provide the listserv.

Updates

Keep AgSTAR and GMI outreach documents and resources current and up to date based on recent developments.

Quick turn-around and in-depth analyses

On an as-needed basis, respond to public inquiries by conducting research on government and industry policy, statistics, business practice, industry, market and government trends and other topics pertaining to expanding methane mitigation and recovery practices. This assistance may include developing outreach materials communicating the results of these analyses in the form of reports, technical documentation, and other written materials. As appropriate, this assistance may entail quick response or it may involve more detailed research and analyses.

Illustrative Administrative Activities

The Contractor shall coordinate with the COR to support AgSTAR and the Agriculture Subcommittee and Wastewater Task Force of the Global Methane Initiative. Illustrative activities

could include contributing to the development or updates of the Agriculture Subcommittee Action Plan, working with the Agriculture Subcommittee or Wastewater Task Force meetings, creation and management of an electronic framework for emissions tracking among the member countries managing the AgSTAR list serv, managing the Global Methane Initiative Agriculture Project Network contact list, and supporting the activities of the Global Methane Initiative Secretariat and Administrative Support Group. The EPA COR will ensure that the list serv is provided to each BPA holder. Member countries can be found at (member countries can be found at <http://www.globalmethane.org/partners/index.aspx>)

1.2.6. Tracking Support

The contractor shall track data related to current, closed, and potential methane mitigation and recovery projects, both domestically and internationally. This data may include items such as site characteristics, volume of feedstock(s), technology type, contact information for owners/operators/developers/utilities, benefits achieved, costs incurred, as well as Government or Partner activity data, such as services/technical support provided and related correspondence. The contractor shall respond to a variety of diverse data requests and queries to be generated from the AgSTAR and GMI agricultural project databases that may include queries such as site-specific information, technology applications, number and types of electricity or other use projects. If needed, the contractor shall establish new databases to handle expanded subsectors or additional technology types.

1.2.7. Methane Emission Inventories Support

The contractor shall prepare methane emission inventories from facilities in the identified subsectors in the US and internationally.

US Methane Inventories

The contractor shall contribute to the preparation, publication, and submittal of the annual *US Inventory of Greenhouse Gas Emissions and Sinks* as well as the periodic preparation, publication, and submittal of the US National Communication under the U.N. Framework Convention on Climate Change. These efforts may include research, compilation and interpretation of emission data to develop a credible and verifiable emission inventory. See: <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>

International Methane Inventory

The contractor shall actively participate in and contribute to the development and implementation of industry-specific best practices for preparing emission methodologies through the Intergovernmental Panel on Climate Change. The contractor may be called upon to support development of white papers, and to participate in workshops and review panels. See: <http://www.epa.gov/climatechange/emissions/globalghg.html>

1.3 Other Information

The contractor should have demonstrated commercial-scale experience in the field to assist in the work described in this SOW. The scale of digester systems involved ranges from small, household systems to large agro-industrial plants in climates varying around the world. The level

of digester technology varies from low-tech fixed concrete dome digesters to high-tech induced blanket reactors.

Foreign language speaking capabilities and local office capacity in Global Methane Initiative (GMI) countries (found at www.globalmethane.org/partners/index.aspx) is desirable.

A small business task order will be awarded separately. The small business vendor will be responsible for some conference planning/events for the resulting BPA awardees under this RFQ. Your technical plan must demonstrate how you will communicate and coordinate with the small business vendor when a conference or workshop is required. The small business vendor will provide the administrative support such as planning and coordination of the event. Technical content for workshops, training or conferences such as speakers, topics, etc remain the responsibility of the BPA contractors.

COMPETITIVE TASK ORDER PROCEDURES

(A) One or more Task Orders (TOs) may be issued during the performance of this BPA. In accordance with the FAR 8.405-3(c)(2), Ordering from BPA's, the Contracting Officer will give each awardee a fair opportunity to be considered for each order. Procedures and selection factors to be considered for each TO that provides fair opportunity are shown below.

(B) Procedures providing a fair opportunity for consideration on each requirement.

(i) Orders at or below the micro-purchase threshold. The ordering activity may place orders at or below the micro-purchase threshold with any BPA holder that can meet the agency needs. The ordering activity should attempt to distribute any such orders among the BPA holders.

(ii) Orders exceeding the micro-purchase threshold but not exceeding the simplified acquisition threshold.

(a) The ordering activity must provide each multiple-award BPA holder a fair opportunity to be considered for each order exceeding the micro-purchase threshold, but not exceeding the simplified acquisition threshold unless one of the exceptions at 8.405-6(a)(1)(i) applies.

(b) The ordering activity need not contact each of the multiple-award BPA holders before placing an order if information is available to ensure that each BPA holder is provided a fair opportunity to be considered for each order.

(c) The ordering activity contracting officer shall document the circumstances when restricting consideration to less than all multiple-award BPA holders offering the required supplies and services.

(iii) Orders exceeding the simplified acquisition threshold.

(a) The ordering activity shall place an order in accordance with paragraphs (1), (2) and (3) of this paragraph, unless the requirement is waived on the basis of a justification that is prepared and approved in accordance with 8.405-6. The ordering activity shall—

(1) Provide an RFQ to all BPA holders offering the required supplies or services under the multiple-award BPAs, to include a description of the supplies to be delivered or the services to be performed and the basis upon which the selection will be made;

(2) Afford all BPA holders responding to the RFQ an opportunity to submit a quote; and

(3) Fairly consider all responses received and make award in accordance with the selection procedures.

(C) **Task Order Ordering Process for Selected Multi-awardees.**

- (1) The CO will issue a TO request to those awardees selected for consideration. The request will include a Statement of Work (SOW) that includes a detailed description of work to be accomplished, a listing of the deliverables, the period of performance (POP) of the task order, and additional information as appropriate. Note: the Task Order POP may be for greater than one year, or may include additional option periods if the need is on-going. The request will also include specific instructions for the submission of responses (i.e., oral or written, distribution instructions), the selection criteria factors and other information deemed appropriate.
- (2) Awardees will generally be allowed between 7 and 14 calendar days to prepare and submit responses. However, more or less time may be necessary based on the requirements. The due date shall be set forth in each Task Order request. Awardee(s) may "NO BID" at their own discretion. **It is recommended that "NO BIDS" include a brief explanation for non participation.**
- (3) **Bid and Proposal (B&P) Costs.** B&P costs of preparing a TO estimates will not be reimbursed as a direct cost to this contract.
- (4) **Technical Approach.** The Task Order request will state whether an oral presentation is required in addition to or instead of the written technical response. Both oral and written technical responses shall address, at a minimum:

Technical Approach

Lead Personnel

Risks

Period of Performance (if not specified by the Government)

Teaming Arrangement to include subcontracting

Past Performance

The technical information should be brief, i.e., 3-5 single sided pages stating compliance or exception to TO requirements, risks, assumptions, and conflict of interest issues. Responses shall not merely restate TO SOW requirements.

- (5) **Price/Cost Estimates.** A written cost estimate is always required. This area of the response shall include detailed cost/price amounts of all resources required to accomplish the task, (i.e. man-hours, equipment, travel, etc.). At a minimum, the following data will be provided:

- (i) Identify labor categories in accordance with BPA schedule and the number of hours required for performance of the task. The offeror must provide (with complete prices) cost estimates which include the identification of clerical labor, and ODC cost elements and identify any Government Furnished Property (GFP) and/or GFI required (if any) for task performance.

(ii) **Other Relevant Information.** Must be written and must address other relevant information as required by the contract or requested by the TO request.

- (6) If necessary, during the evaluation of responses, the Government may contact an awardee with questions concerning their response. However, such contact does not constitute discussion as defined by FAR 15.306.

(D) **Selection Criteria for Awarding Task Orders.** Upon receipt of responses, the Government will evaluate the responses in accordance with the selection criteria. The Government's award decision will be based, at a minimum, on selection criteria that addresses past performance, technical/management approach and price/cost. Individual task order selection criteria may include other factor(s) relevant to the particular task order. The order of importance for the factors may be identified on each individual request.

(E) **Process for Awards under Other than Fair Opportunity to be Considered Provisions.** The process for excepted requirements is the same as paragraph "D" above except that there will be no selection criteria;

(F) **Unauthorized Work.** The Contractor is not authorized to commence task performance prior to issuance of a signed TO or verbal approval provided by the CO and are not authorized to exceed obligated amounts of funding.

(G) **Task Funding Restriction.** No unfunded tasks are allowed.

(H) **Task Order Issuance.** TOs will be issued via electronic commerce by the CO.

(I) **Ombudsman Description** Ms. Susan Moroni is the Competition Advocate and Ombudsman for GSA awarded task orders/BPAs issued by the Office of Administrative Management (OAM). Questions/concerns/complaints may be emailed to Ms. Moroni at Moroni.susan@epa.gov.

The following clauses will be incorporated into the resultant Order, as well as all clauses in the vendor's GSA schedule contract.

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1. EP 52.000-000 (NOV 1994) DEVIATION NOTICE REGARDING PROHIBITED CONTRACTOR ACTIVITIES ON ENVIRONMENTAL PROTECTION AGENCY (EPA) CONTRACTS

The Contractor shall not perform any of the following activities on behalf of EPA in connection with this blanket purchase agreement:

1. The actual preparation of Congressional testimony.
2. The interviewing or hiring of individuals for employment at EPA.
3. Developing and/or writing of Position Descriptions and Performance Standards.
4. The actual determination of Agency policy.
5. Participating as a voting member on a Performance Evaluation Board; participating in and/or attending Award Fee meetings.
6. Preparing Award Fee Letters, even under typing services contracts.
7. The actual preparation of Award Fee Plans.
8. The preparation of documents on EPA Letterhead other than routine administrative correspondence.
9. Reviewing vouchers and invoices for the purposes of determining whether costs, hours, and work performed are reasonable.
10. The preparation of Statements of Work, Task Orders, Technical Direction Documents, Delivery Orders, or any other work issuance document under a contract or blanket purchase agreement that the contractor is performing or may perform. Such a work issuance document, prepared by an EPA prime contractor under an EPA prime contract or blanket purchase agreement for its subcontractor, is exempt from this prohibition.
11. The actual preparation of responses to audit reports from the Inspector General, General Accounting Office, or other auditing entities.
12. Preparing responses to Congressional correspondence.
13. The actual preparation of responses to Freedom of Information Act requests, other than routine, non-judgmental correspondence.
14. Any contract or blanket purchase agreement which authorizes a contractor to represent itself as EPA to outside parties.
15. Conducting administrative hearings.

16. Reviewing findings concerning the eligibility of EPA employees for security clearances.

17. The actual preparation of an office's official budget request.

2. 1552.203-71 (AUG 2000) DISPLAY OF EPA OFFICE OF INSPECTOR GENERAL HOTLINE POSTER

- (a) For EPA contracts or blanket purchase agreements valued at \$1,000,000 or more including all options, the Contractor shall prominently display EPA Office of Inspector General Hotline posters in Contractor facilities where the work is performed under the contract or blanket purchase agreement.
- (b) Office of Inspector General hotline posters may be obtained from the EPA Office of Inspector General, ATTN: OIG Hotline (2443), 1200 Pennsylvania Avenue, NW, Washington, DC 20460, or by calling (202) 260-5113.
- (c) The Contractor need not comply with paragraph (a) of this clause if it has established a mechanism, such as a hotline, by which employees may report suspected instances of improper conduct, and provided instructions that encourage employees to make such reports.

3. 1552.208-70 (OCT 2000) PRINTING

(a) Definitions.

"Printing" is the process of composition, plate making, presswork, binding and microform; or the end items produced by such processes and equipment. Printing services include newsletter production and periodicals which are prohibited under EPA contracts and blanket purchase agreements.

"Composition" applies to the setting of type by hot-metal casting, photo typesetting, or electronic character generating devices for the purpose of producing camera copy, negatives, a plate or image to be used in the production of printing or microform.

"Camera copy" (or "camera-ready copy") is a final document suitable for printing/duplication.

"Desktop Publishing" is a method of composition using computers with the final output or generation of camera copy done by a color inkjet or color laser printer. This is not considered "printing." However, if the output from desktop publishing is being sent to a typesetting device (i.e., Linotronic) with camera copy being produced in either paper or negative format, these services are considered "printing".

"Microform" is any product produced in a miniaturized image format, for mass or general distribution and as a substitute for conventionally printed material. Microform services are classified as printing services and includes microfiche and microfilm. The contractor may make up to two sets of microform files for archival purposes at the end of the blanket purchase agreement period of performance.

"Duplication" means the making of copies on photocopy machines employing electrostatic, thermal, or other processes without using an intermediary such as a negative or plate.

"Requirement" means an individual photocopying task. (There may be multiple requirements under a Work Assignment or Task Order. Each requirement would be subject to the photocopying limitation of 5,000 copies of one page or 25,000 copies of multiple pages in the aggregate per requirement).

(b) *Prohibition.*

The contractor shall not engage in, nor subcontract for, any printing in connection with the performance of work under this blanket purchase agreement. Duplication of more than 5,000 copies of one page or more than 25,000 copies of multiple pages in the aggregate per requirement constitutes printing. The intent of the limitation is not to allow the duplication of final documents for use by the Agency. In compliance with EPA Order 2200.4a, EPA Publication Review Procedure, the Office of Communications, Education, and Media Relations is responsible for the review of materials generated under a contract or blanket purchase agreement published or issued by the Agency under a contract or blanket purchase agreement intended for release to the public.

(c) *Affirmative Requirements.*

- (1) Unless otherwise directed by the contracting officer, the contractor shall use double-sided copying to produce any progress report, draft report or final report.
- (2) Unless otherwise directed by the contracting officer, the contractor shall use recycled paper for reports delivered to the Agency which meet the minimum content standards for paper and paper products as set forth in EPA's Web site for the Comprehensive Procurement Guidelines at: <http://www.epa.gov/cpg/>.

(d) *Permitted Contractor Activities.*

- (1) The prohibitions contained in paragraph (b) do not preclude writing, editing, or preparing manuscript copy, or preparing related illustrative material to a final document (camera-ready copy) using desktop publishing.
- (2) The contractor may perform a requirement involving the duplication of less than 5,000 copies of only one page, or less than 25,000 copies of multiple pages in the aggregate, using one color (black), so long as such pages do not exceed the maximum image size of 10 $\frac{3}{4}$ by 14 $\frac{1}{4}$ inches, or 11 by 17 paper stock. Duplication services below these thresholds are not considered printing. If performance of the blanket purchase agreement will require duplication in excess of these limits, contractors must immediately notify the contracting officer in writing. EPA may then seek a waiver from the Joint Committee on Printing, U. S. Congress. The intent of the limitation is to allow "incidental" duplication (drafts, proofs) under a contract or blanket purchase agreement. The intent of the limitation is not to allow the duplication of copies of final documents for use by the Agency or as distributed as instructed by the Agency.
- (3) The contractor may perform a requirement involving the multi-color duplication of no more than 100 pages in the aggregate using color copier technology, so

long as such pages do not exceed the maximum image size of 10\3/4\ by 14\1/4\ inches, or 11 by 17 paper stock. Duplication services below these thresholds are not considered printing. If performance of the blanket purchase agreement will require duplication in excess of these limits, contractors must immediately notify the contracting officer in writing. EPA may then seek a waiver from the Joint Committee on Printing, U. S. Congress.

- (4) The contractor may perform the duplication of no more than a total of 100 diskettes or CD-ROM's. Duplication services below these thresholds are not considered printing. If performance of the blanket purchase agreement will require duplication in excess of these limits, contractors must immediately notify the contracting officer in writing. EPA may then seek a waiver from the Joint Committee on Printing, U. S. Congress.

(e) *Violations.*

The contractor may not engage in, nor subcontract for, any printing in connection with the performance of work under the blanket purchase agreement. The cost of any printing services in violation of this clause will be disallowed, or not accepted by the Government.

(f) *Flowdown Provision.*

The contractor shall include in each subcontract which may involve a requirement for any printing/duplicating/copying a provision substantially the same as this clause.

4. 1552.209-71 (MAY 1994) ALTERNATE I ORGANIZATIONAL CONFLICTS OF INTEREST

- (a) The Contractor warrants that, to the best of the Contractor's knowledge and belief, there are no relevant facts or circumstances which could give rise to an organizational conflict of interest, as defined in FAR Subpart 9.5, or that the Contractor has disclosed all such relevant information.
- (b) Prior to commencement of any work, the Contractor agrees to notify the Contracting Officer immediately that, to the best of its knowledge and belief, no actual or potential conflict of interest exists or to identify to the Contracting Officer any actual or potential conflict of interest the firm may have. In emergency situations, however, work may begin but notification shall be made within five (5) working days.
- (c) The Contractor agrees that if an actual or potential organizational conflict of interest is identified during performance, the Contractor will immediately make a full disclosure in writing to the Contracting Officer. This disclosure shall include a description of actions which the Contractor has taken or proposes to take, after consultation with the Contracting Officer, to avoid, mitigate, or neutralize the actual or potential conflict of interest. The Contractor shall continue performance until notified by the Contracting Officer of any contrary action to be taken.
- (d) Remedies - The EPA may terminate this blanket purchase agreement for convenience, in whole or in part, if it deems such termination necessary to avoid an organizational conflict of interest. If the Contractor was aware of a potential organizational conflict of interest prior to award or discovered an actual or potential conflict after award and did

not disclose it or misrepresented relevant information to the Contracting Officer, the Government may terminate the blanket purchase agreement for default, debar the Contractor from Government contracting, or pursue such other remedies as may be permitted by law or this blanket purchase agreement.

- (e) The Contractor agrees to insert in each subcontract or consultant agreement placed hereunder provisions which shall conform substantially to the language of this clause, including this paragraph, unless otherwise authorized by the Contracting Officer.

5. 1552.209-76 (May 2010) DEVIATION Contractor Performance Information

(a) In accordance with Federal Acquisition Regulation (FAR) Subpart 42.15 and EPAAR Deviation 1542.15, past performance evaluations shall be prepared and submitted electronically to the Past Performance Information Retrieval System (PPIRS). The process for submitting evaluation reports to PPIRS shall be through use of the Contractor Performance Assessment Reporting System (CPARS) which has connectivity with PPIRS.

Using CPARS, EPA shall evaluate contractor performance using the following evaluation factors as applicable: Technical (Quality of Product), Product Performance, Systems Engineering, Software Engineering, Logistic Support/Sustainment, Product Assurance, Other Technical Performance, Schedule, Cost Control (Not Applicable for Firm-Fixed Price or Firm-Fixed Price with Economic Price Adjustment), Management, Management Responsiveness, Subcontract Management, Program Management and Other Management, Other Areas, and Utilization of Small Business.

Each evaluation factor shall be rated in accordance with a five scale rating system: Red/Unsatisfactory, Yellow/Marginal, Green/Satisfactory, Purple/Very Good, and Dark Blue/Exceptional, N/A = Not Applicable. Plus or minus signs may be used to indicate an improving (+) or worsening (-) trend insufficient to change assessment status.

(b) The contractor shall designate representatives to whom the evaluations will be sent automatically and electronically. The name, title, e-mail address and phone number of the designated contractor representative shall be provided to the contracting officer who will, in turn, provide that information to their CPARS Focal Point administrator for authorization access. Any changes in designated contractor personnel shall be the sole responsibility of the contractor to inform the contracting officer and the CPARS Focal Point.

The contractor has thirty (30) calendar days from the date of the contractor's receipt of the Report to review and provide a response to the contracting officer regarding the contents of the Report. The response shall be sent through CPARS.

The contractor's response to the Report may include written comments, rebuttals (disagreements), or additional information. If the contractor does not respond to the Report within the designated thirty (30) calendar days, the specified ratings in the Report are deemed appropriate for the evaluation period. In this instance, the contracting officer shall complete the Agency review and finalize the evaluation in CPARS after expiration of the specified 30 calendar days.

If the contractor submits comments, rebuttals (disagreements), or additional information to the contracting officer which contests the ratings, the contracting officer, in consultation with the contract level contracting officer's representative and/or applicable official, shall initially try to resolve the disagreement with the contractor.

If the disagreement is not resolved between the contractor and the contracting officer, the matter will be referred, as promptly as possible, to the Reviewing Official (an official at least one level above the contracting officer or contract specialist) for resolution.

The Agency Reviewing Official shall record a determination in CPARS. The ultimate conclusion on the performance evaluation is a decision of the EPA.

The contracting officer shall complete the Agency review and finalize the evaluation in CPARS after the contracting officer receives the Agency Reviewing Official's determination.

An interim or final report is considered completed after the contracting officer finalizes the evaluation in CPARS.

6. 1552.211-72 Monthly Progress Report (JUN 1996)

(a) The Contractor shall furnish ——— copies of the combined monthly technical and financial progress report stating the progress made, including the percentage of the project completed, and a description of the work accomplished to support the cost. If the work is ordered using work assignments or delivery orders, include the estimated percentage of task completed during the reporting period for each work assignment or delivery order.

(b) Specific discussions shall include difficulties encountered and remedial action taken during the reporting period, and anticipated activity with a schedule of deliverables for the subsequent reporting period.

(c) The Contractor shall provide a list of outstanding actions awaiting Contracting Officer authorization, noted with the corresponding work assignment, such as subcontractor/consultant consents, overtime approvals, and work plan approvals.

(d) The report shall specify financial status at the contract level as follows:

(1) For the current reporting period, display the amount claimed.

(2) For the cumulative period and the cumulative contract life display: the amount obligated, amount originally invoiced, amount paid, amount suspended, amount disallowed, and remaining approved amount. The remaining approved amount is defined as the total obligated amount, less the total amount originally invoiced, plus total amount disallowed.

(3) Labor hours.

- (i) A list of employees, their labor categories, and the numbers of hours worked for the reporting period.
- (ii) For the current reporting period, display the expended direct labor hours and costs broken out by EPA contract labor hour category for the prime contractor and each subcontractor and consultant.
- (iii) For the cumulative contract period and the cumulative contract life display: the negotiated, expended and remaining direct labor hours and costs broken out by EPA contract labor hour category for the prime contractor, and each subcontractor and consultant.
- (iv) Display the estimated direct labor hours and costs to be expended during the next reporting period.
- (4) Display the current dollar ceilings in the contract, net amount invoiced, and remaining amounts for the following categories: Direct labor hours, total estimated cost, award fee pool (if applicable), subcontracts by individual subcontractor, travel, program management, and Other Direct Costs (ODCs).
- (5) Unbilled allowable costs. Display the total costs incurred but unbilled for the current reporting period and cumulative for the contract.
- (6) Average cost of direct labor. Compare the actual average cost per hour to date with the average cost per hour of the approved work plans for the current contract period.
- (e) The report shall specify financial status at the work assignment or delivery order level as follows:
 - (1) For the current period, display the amount claimed.
 - (2) For the cumulative period display: amount shown on workplan, or latest work assignment/delivery order amendment amount (whichever is later); amount currently claimed; amount paid; amount suspended; amount disallowed; and remaining approved amount. The remaining approved amount is defined as: the workplan amount or latest work assignment or delivery order amount (whichever is later), less total amounts originally invoiced, plus total amount disallowed.
 - (3) Labor hours.
 - (i) A list of employees, their labor categories, and the number of hours worked for the reporting period.
 - (ii) For the current reporting period, display the expended direct labor hours and costs broken out by EPA contract labor hour category for the prime contractor and each subcontractor and consultant.
 - (iii) For the current reporting period, cumulative contract period, and the cumulative contract life display: the negotiated, expended and remaining direct labor hours and costs broken out by EPA contract labor hour category for the prime contractor and each subcontractor and consultant.
 - (iv) Display the estimated direct labor hours and costs to be expended during the next reporting period.
 - (v) Display the estimates of remaining direct labor hours and costs required to complete the work

assignment or delivery order.

(4) Unbilled allowable costs. Display the total costs incurred but unbilled for the current reporting period and cumulative for the work assignment.

(5) Average cost of direct labor. Display the actual average cost per hour with the cost per hour estimated in the workplan.

(6) A list of deliverables for each work assignment or delivery order during the reporting period.

(f) This submission does not change the notification requirements of the "Limitation of Cost" or "Limitation of Funds" clauses requiring separate written notice to the Contracting Officer.

(g) The reports shall be submitted to the following addresses on or before the _____ of each month following the first complete reporting period of the contract. See EPAAR 1552.232-70, Submission of Invoices, paragraph (e), for details on the timing of submittals. Distribute reports as follows:

No. of copies	Addressee
	Project Officer.
	Contracting Officer.

7. 1552.211-79 (OCT 2000) COMPLIANCE WITH EPA POLICIES FOR INFORMATION RESOURCES MANAGEMENT

(a) *Definition.* Information Resources Management (IRM) is defined as any planning, budgeting, organizing, directing, training, promoting, controlling, and managing activities associated with the burden, collection, creation, use and dissemination of information. IRM includes both information itself, and the management of information and related resources such as personnel, equipment, funds, and technology. Examples of these services include but are not limited to the following:

(1) The acquisition, creation, or modification of a computer program or automated data base for delivery to EPA or use by EPA or contractors operating EPA programs.

(2) The analysis of requirements for, study of the feasibility of, evaluation of alternatives for, or design and development of a computer program or automated data base for use by EPA or contractors operating EPA programs.

(3) Services that provide EPA personnel access to or use of computer or word processing equipment, software, or related services.

(4) Services that provide EPA personnel access to or use of: Data communications; electronic messaging services or capabilities; electronic bulletin boards, or other forms of electronic information dissemination; electronic record-keeping; or any other automated information services.

(b) *General.* The Contractor shall perform any IRM related work under this BPA in accordance with the IRM policies, standards and procedures set forth in this clause and noted below. Upon receipt of a work request (i.e. delivery order or work assignment), the Contractor shall check this listing of directives (see paragraph (d) for electronic access). The applicable directives for performance of the work request are those in effect on the date of issuance of the work request.

(1) *IRM policies, standards and procedures.* The 2100 Series (2100-2199) of the Agency's Directive System contains the majority of the Agency's IRM policies, standards and procedures.

(2) *Groundwater program IRM requirement.* A contractor performing any work related to collecting Groundwater data; or developing or enhancing data bases containing Groundwater quality data shall comply with EPA Order 7500.1A—*Minimum Set of Data Elements for Groundwater*.

(3) *EPA computing and telecommunications services.* The Enterprise Technology Services Division (ETSD) Operational Directives Manual contains procedural information about the operation of the Agency's computing and telecommunications services. Contractors performing work for the Agency's National Computer Center or those who are developing systems which will be operating on the Agency's national platforms must comply with procedures established in the Manual. (This document may be found at: <http://basin.rtpnc.epa.gov/etsd/directives.nsf>).

(c) *Printed documents.* Documents listed in (b)(1) and (b)(2) may be obtained from: U.S. Environmental Protection Agency Office of Administration Facilities Management and Services Division Distribution Section Mail Code: 3204 1200 Pennsylvania Ave., NW., Washington, DC 20460 Phone: (202) 260-5797

(d) *Electronic access.* A complete listing, including full text, of documents included in the 2100 Series of the Agency's Directive System is maintained on the EPA Public Access Server on the Internet at <http://epa.gov/docs/irmpoli8/>.

8. EP 52.212-140 (APR 1984) PERIOD OF PERFORMANCE

The period of performance of this blanket purchase agreement shall be from ____ through ____.

9. 1552.216-72 (APR 1984) ORDERING—BY DESIGNATED ORDERING OFFICERS

(a) The Government will order any supplies and services to be furnished under this contract by issuing tasks orders on Optional Form 347, or any agency prescribed form. In addition to the Contracting Officer, the following individuals are authorized ordering officers.

NONE

(b) A Standard Form 30 will be the method of amending delivery orders.

(c) The Contractor shall acknowledge receipt of each order and shall prepare and forward to the COR within ten (10) calendar days the proposed quote for accomplishing the assigned task within the period specified.

(d) If the Contractor considers the estimated labor hours or specified work completion date to be unreasonable, he/she shall promptly notify the COR and Contracting Officer in writing within 10 calendar days, stating why the estimated labor hours or specified completion date is considered unreasonable.

(e) Each task order will have a ceiling price, which the Contractor may not exceed. When the Contractor has reason to believe that the labor payment and support costs for the order, which will accrue in the next thirty (30) days, will bring total cost to over 85 percent of the ceiling price specified in the order, the Contractor shall notify the COR and the Contracting Officer.

(f) Paragraphs (c), (d), and (e) of this clause apply only when services are being ordered.

10. 1552.232- 70 Submission of Invoices (JUN 1996)

In order to be considered properly submitted, an invoice or request for contract financing payment must meet the following contract requirements in addition to the requirements of FAR 32.905:

(a) Unless otherwise specified in the contract, an invoice or request for contract financing payment shall be submitted as an original and five copies. The Contractor shall submit the invoice or request for contract financing payment to the following offices/individuals designated in the contract: the original and two copies to the Accounting Operations Office shown in Block _____ on the cover of the contract; two copies to the Project Officer (the Project Officer may direct one of these copies to a separate address); and one copy to the Contracting Officer.

(b) The Contractor shall prepare its invoice or request for contract financing payment on the prescribed Government forms. Standard Forms Number 1034, Public Voucher for Purchases and Services other than Personal, shall be used by contractors to show the amount claimed for reimbursement. Standard Form 1035, Public Voucher for Purchases and Services other than Personal—Continuation Sheet, shall be used to furnish the necessary supporting detail or additional information required by the Contracting Officer. The Contractor may submit self-designed forms which contain the required information.

(c)(1) The Contractor shall prepare a contract level invoice or request for contract financing payment in accordance with the invoice preparation instructions identified as a separate attachment in Section J of the contract. If contract work is authorized by individual work assignments, the invoice or request for contract financing payment shall also include a summary of the current and cumulative amounts claimed by cost element for each work assignment and for the contract total, as well as any supporting data for each work assignment as identified in the instructions.

(2) The invoice or request for contract financing payment shall include current and cumulative charges by major cost element such as direct labor, overhead, travel, equipment, and other direct costs. For current costs, each major cost element shall include the appropriate supporting schedule identified in the invoice preparation instructions. Cumulative charges represent the net sum of current charges by cost element for the contract period.

(3) The charges for subcontracts shall be further detailed in a supporting schedule showing the major cost elements for each subcontract. The degree of detail for any subcontract exceeding \$5,000 is to be the same as that set forth under (c)(2).

(4) The charges for consultants shall be further detailed in the supporting schedule showing the major cost elements of each consultant. For current costs, each major cost element of the consulting agreement shall also include the supporting schedule identified in the invoice preparation instructions.

(d) Invoices or requests for contract financing payment must clearly indicate the period of performance for which payment is requested. Separate invoices or requests for contract financing payment are required for charges applicable to the basic contract and each option period.

(e)(1) Notwithstanding the provisions of the clause of this contract at FAR 52.216-7, Allowable Cost and Payment, invoices or requests for contract financing payment shall be submitted once per month unless there has been a demonstrated need and Contracting Officer approval for more frequent billings. When submitted on a monthly basis, the period covered by invoices or requests for contractor financing payments shall be the same as the period for monthly progress reports required under this contract.

(2) If the Contracting Officer allows submissions more frequently than monthly, one submittal each month shall have the same ending period of performance as the monthly progress report.

(3) Where cumulative amounts on the monthly progress report differ from the aggregate amounts claimed in the invoice(s) or request(s) for contract financing payments covering the same period, the contractor shall provide a reconciliation of the difference as part of the payment request. Alternate I (JUN 1996). If used in a fixed-rate type contract, substitute the following paragraphs (c)(1) and (2) for paragraphs (c)(1) and (2) of the basic clause:

(c)(1) The Contractor shall prepare a contract level invoice or request for contract financing payment in accordance with the invoice preparation instructions identified as a separate attachment in Section J of the contract. If contract work is authorized by individual delivery orders, the invoice or request for contract financing payment shall also include a summary of the current and cumulative amounts claimed by cost element for each delivery order and for the contract total, as well as any supporting data for each delivery order as identified in the instructions.

(2) The invoice or request for contract financing payment that employs a fixed rate feature shall include current and cumulative charges by contract labor category and by other major cost elements such as travel, equipment, and other direct costs. For current costs, each cost element shall include the appropriate supporting schedules identified in the invoice preparation instructions.

11. 1552.235-79 (APR 1996) RELEASE OF CONTRACTOR CONFIDENTIAL BUSINESS INFORMATION

(a) The Environmental Protection Agency (EPA) may find it necessary to release information submitted by the Contractor either in response to this solicitation or pursuant to the provisions of this blanket purchase agreement, to individuals not employed by EPA. Business information that is ordinarily entitled to confidential treatment under existing Agency regulations (40 C.F.R. Part 2) may be included in the information released to these individuals. Accordingly, by submission of this proposal or signature on this blanket

purchase agreement or other contracts, the Contractor hereby consents to a limited release of its confidential business information (CBI).

- (b) Possible circumstances where the Agency may release the Contractor's CBI include, but are not limited to the following:

(1) To other Agency contractors tasked with assisting the Agency in the recovery of Federal funds expended pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Sec. 9607, as amended, (CERCLA or Superfund);

(2) To the U.S. Department of Justice (DOJ) and contractors employed by DOJ for use in advising the Agency and representing the Agency in procedures for the recovery of Superfund expenditures;

(3) To parties liable, or potentially liable, for costs under CERCLA Sec. 107 (42 U.S.C. Sec. 9607), et al, and their insurers (Potentially Responsible Parties) for purposes of facilitating settlement or litigation of claims against such parties;

(4) To other Agency contractors who, for purposes of performing the work required under the respective contracts, require access to information the Agency obtained under the Clean Air Act (42 U.S.C. 7401 et seq.); the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.); the Safe Drinking Water Act (42 U.S.C. 300f et seq.); the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. 136 et seq.); the Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.); the Toxic Substances Control Act (15 U.S.C. 2601 et seq.); or the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 et seq.);

(5) To other Agency contractors tasked with assisting the Agency in handling and processing information and documents in the administration of Agency contracts, such as providing both preaward and post award audit support and specialized technical support to the Agency's technical evaluation panels;

(6) To employees of grantees working at EPA under the Senior Environmental Employment (SEE) Program;

(7) To Speaker of the House, President of the Senate, or Chairman of a Committee or Subcommittee;

(8) To entities such as the General Accounting Office, boards of contract appeals, and the Courts in the resolution of solicitation or contract protests and disputes;

(9) To Agency contractor employees engaged in information systems analysis, development, operation, and maintenance, including performing data processing and management functions for the Agency;
and

(10) Pursuant to a court order or court-supervised agreement.

(c) The Agency recognizes an obligation to protect the contractor from competitive harm that may result from the release of such information to a competitor. (See also the clauses in this document entitled "Screening Business Information for Claims of Confidentiality" and "Treatment of Confidential Business Information.") Except where otherwise provided by law, the Agency will permit the release of CBI under subparagraphs (1), (3), (4), (5), (6), or (9) only pursuant to a confidentiality agreement.

(d) With respect to contractors, 1552.235-71 will be used as the confidentiality agreement. With respect to Potentially Responsible Parties, such confidentiality agreements may permit further disclosure to other entities where necessary to further settlement or litigation of claims under CERCLA. Such entities include, but are not limited to accounting firms and technical experts able to analyze the information, provided that they also agree to be bound by an appropriate confidentiality agreement.

(e) This clause does not authorize the Agency to release the Contractor's CBI to the public pursuant to a request filed under the Freedom of Information Act.

(f) The Contractor agrees to include this clause, including this paragraph (f), in all subcontracts at all levels awarded pursuant to this blanket purchase agreement that require the furnishing of confidential business information by the subcontractor.

12. 1552.237-72 Key Personnel (APR 1984)

(a) The Contractor shall assign to this contract the following key personnel:

- Project Manager (or equivalent from vendor labor descriptions)
- Senior Environmental Scientist (or equivalent from vendor labor descriptions)

(b) During the first ninety (90) days of performance, the Contractor shall make no substitutions of key personnel unless the substitution is necessitated by illness, death, or termination of employment. The Contractor shall notify the Contracting Officer within 15 calendar days after the occurrence of any of these events and provide the information required by paragraph (c) of this clause. After the initial 90-day period, the Contractor shall submit the information required by paragraph (c) to the Contracting Officer at least 15 days prior to making any permanent substitutions.

(c) The Contractor shall provide a detailed explanation of the circumstances necessitating the proposed substitutions, complete resumes for the proposed substitutes, and any additional information requested by the Contracting Officer. Proposed substitutes should have comparable qualifications to those of the persons being replaced. The Contracting Officer will notify the Contractor within 15 calendar days after receipt of all required information of the decision on substitutions. This clause will be modified to reflect any approved changes of key personnel.

"Disputes" clause of this contract. If the Schedule provides rates for overtime the premium portion of those rates will be reimbursable only to the extent the overtime is approved by the Contracting Officer.

(b) *Materials, other direct costs, and subcontracts.* (1) The allowability of direct materials and other direct costs shall be determined by the Contracting Officer in accordance with subpart 31.2 of the Federal Acquisition Regulation (FAR) in effect on the date of this contract. Reasonable and allocable material handling costs or indirect costs may be included in the charge for material or other direct costs to the extent they are clearly excluded from the hourly rate. Material handling and/or indirect cost rates are specified in the "Indirect Costs" clause. Material handling costs are comprised of indirect costs, including, when appropriate, general and administrative expense allocated to direct materials in accordance with the Contractor's usual accounting practices consistent with subpart 31.2 of the FAR. The Contractor shall be reimbursed for items and services purchased directly for the contract only when cash, checks, or other forms of actual payment have been made for such purchased items or services. Direct materials or other direct costs, as used in this clause, are those items which enter directly into the end product, or which are used or consumed directly in connection with the furnishing of the end product.

(2) Subcontracted effort may be included in the fixed hourly rates discussed in paragraph (a)(1) of this clause and will be reimbursed as discussed in that paragraph. Otherwise, the cost of subcontracts that are authorized under the subcontracts clause of this contract shall be reimbursable costs under this clause provided that the costs are consistent with paragraph (b)(3) of this clause. Reimbursable costs in connection with subcontracts shall be payable to subcontractors consistent with FAR 32.504 in the same manner as for services purchased directly for the contract under paragraph (a)(1) of this clause. Reimbursable costs shall not include any costs arising from the letting, administration, or supervision of performance of the subcontract, if the costs are included in the hourly rates payable under paragraph (a)(1) of this clause.

(3) To the extent able, the Contractor shall (i) obtain materials at the most advantageous prices available with due regard to securing prompt delivery of satisfactory materials; and (ii) take all cash and trade discounts, rebates, allowances, credits, salvage, commissions, and other benefits. When unable to take advantage of the benefits, the Contractor shall promptly notify the Contracting Officer and give the reasons. Credit shall be given to the Government for cash and trade discounts, rebates, allowances, credits, salvage, the value of any appreciable scrap, commissions, and other amounts that have accrued to the benefit of the Contractor, or would have accrued except for the fault or neglect of the Contractor. The benefits lost without fault or neglect on the part of the Contractor, or lost through fault of the Government, shall not be deducted from gross costs.

(4) If the nature of the work to be performed requires the Contractor to furnish material which is regularly sold to the general public in the normal course of business by the Contractor, the price to be paid for such material, notwithstanding paragraph (b)(1) of this contract, shall be on the basis of an established catalog or list price, in effect when the material is furnished, less all applicable discounts to the Government; provided, that in no event shall such price be in excess of the Contractor's sales price to its most favored customer for the same item in like quantity, or the current market price, whichever is lower.

(c) *Contracting Officer notification.* For contract administration purposes, the Contractor shall notify the Contracting Officer in writing when the total value of all delivery orders issued exceeds 85 percent of the maximum price specified in the schedule.

(d) *Maximum amount.* The Government shall not be obligated to pay the Contractor any amount in excess of the maximum amount in the Schedule, and the Contractor shall not be obligated to continue performance if to do so would exceed the maximum amount set forth in the Schedule, unless or until the Contracting Officer shall have notified the Contractor in writing that the maximum amount has been

increased and shall have specified in the notice a revised maximum that shall constitute the maximum amount for performance under this contract. When and to the extent that the maximum amount set forth in the Schedule has been increased, any hours expended, and material or other direct costs incurred by the Contractor in excess of the maximum amount before the increase, shall be allowable to the same extent as if the hours expended and material costs had been incurred after the increase in the maximum amount.

(e) *Audit.* At any time before final payment under this contract, the Contracting Officer may request audit of the invoices or vouchers and substantiating material. Each payment previously made shall be subject to reduction to the extent of amounts, on preceding invoices or vouchers, that are found by the Contracting Officer not to have been properly payable and shall also be subject to reduction for overpayments or to increase for underpayments. Upon receipt and approval of the voucher or invoice designated by the Contractor as the "completion voucher" or "completion invoice" and substantiating material, and upon compliance by the Contractor with all terms of this contract (including, without limitation, terms relating to patents and the terms of paragraphs (f) and (g) of this clause), the Government shall promptly pay any balance due the Contractor. The completion invoice or voucher, and substantiating material, shall be submitted by the Contractor as promptly as practicable following completion of the work under this contract, but in no event, later than one year (or such longer period as the Contracting Officer may approve in writing) from the date of completion.

(f) *Assignment.* The Contractor, and each assignee under an assignment entered into under this contract and in effect at the time of final payment under this contract, shall execute and deliver, at the time of and as a condition precedent to final payment under this contract, a release discharging the Government, its officers, agents, and employees of and from all liabilities, obligations, and claims arising out of or under this contract, subject only to the following exceptions:

(1) Specified claims in stated amounts, or in estimated amounts if the amounts are not susceptible of exact statement by the Contractor.

(2) Claims, together with reasonable incidental expenses, based upon the liabilities of the Contractor to third parties arising out of performing this contract, that are not known to the Contractor on the date of the execution of the release, and of which the Contractor gives notice in writing to the Contracting Officer not more than 6 years after the date of the release or the date of any notice to the Contractor that the Government is prepared to make final payment, whichever is earlier.

(3) Claims for reimbursement of costs (other than expenses of the Contractor by reason of its indemnification of the Government against patent liability), including reasonable incidental expenses, incurred by the Contractor under the terms of this contract relating to patents.

(g) *Refunds.* The Contractor agrees that any refunds, rebates, or credits (including any related interest) accruing to or received by the Contractor or any assignee, that arise under the materials portion of this contract and for which the Contractor has received reimbursement, shall be paid by the Contractor to the Government. The Contractor and each assignee, under an assignment entered into under this contract and in effect at the time of final payment under this contract, shall execute and deliver, at the time of and as a condition precedent to final payment under this contract, an assignment to the Government of such refunds, rebates, or credits (including any interest) in form and substance satisfactory to the Contracting Officer.

(End of clause)

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1

2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 03/07/2014		2. CONTRACT NO. (If any) EP-BPA-12-H-0031		6. SHIP TO: a. NAME OF CONSIGNEE OAR/OAP/CCD	
3. ORDER NO. EP-B14H-00057		4. REQUISITION/REFERENCE NO. PR-OAR-14-00416			
5. ISSUING OFFICE (Address correspondence to) HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460				b. STREET ADDRESS US Environmental Protection Agency 1200 Pennsylvania Avenue NW Mail Code: 62107J OAP/CCD	
				c. CITY Washington	e. ZIP CODE 20460
7. TO: DICKRAN BABIGIAN				f. SHIP VIA	
a. NAME OF CONTRACTOR EASTERN RESEARCH GROUP, INC.				8. TYPE OF ORDER	
b. COMPANY NAME				<input type="checkbox"/> a. PURCHASE <input checked="" type="checkbox"/> b. DELIVERY REFERENCE YOUR: Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.	
c. STREET ADDRESS 110 HARTWELL AVENUE 7816747200				Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
d. CITY LEXINGTON		e. STATE MA	f. ZIP CODE 024213136		
9. ACCOUNTING AND APPROPRIATION DATA See Schedule				10. REQUISITIONING OFFICE OAR	

11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input type="checkbox"/> a. SMALL <input checked="" type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM <input type="checkbox"/> h. EDWOSB				12. F.O.B. POINT Destination	
13. PLACE OF a. INSPECTION Destination		b. ACCEPTANCE Destination		14. GOVERNMENT B/L NO.	
				15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	
16. DISCOUNT TERMS					

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	GSA Contract #: GS-23F-0225M DUNS Number: (b)(4) The total estimated cost for this task order entitled "Resource Assessment for Indonesia" is \$119,985 for 1,033 labor hours. Continued ...					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
	21. MAIL INVOICE TO:						
	a. NAME RTP Finance Center						\$0.00
	b. STREET ADDRESS (or P.O. Box) US Environmental Protection Agency RTP-Finance Center Mail Drop D143-02 109 TW Alexander Drive						
c. CITY Durham				d. STATE NC	e. ZIP CODE 27711	\$119,985.00	17(i) GRAND TOTAL

22. UNITED STATES OF

AMERICA BY (Signature)

03/06/2014



ELECTRONIC SIGNATURE

23. NAME (Typed)

Margaret Kline

TITLE: CONTRACTING/ORDERING OFFICER

ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION

PAGE NO
2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 03/07/2014	CONTRACT NO. EP-BPA-12-H-0031	ORDER NO. EP-B14H-00057
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0001	<p>\$60,000 is obligated leaving \$59,985 needed to fully fund this task order through its completion date of 6 May 2015.</p> <p>Other Direct Cost: expenditures for any non fungible purchases must be cleared by the EPA Contracting Officer.</p> <p>As required by regulation, property reports shall be sent to the EPA Contract Property Coordinator and a copy to the COR and Contracting Officer. The COR shall not dispose of any property without Contracting Officer authorization,</p> <p>COR: Kurt Roos Alt COR: Allison Costa Admin Office: HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460 Period of Performance: 03/07/2014 to 05/06/2015</p> <p>New Task Order Award - Indonesia</p> <p>Accounting Info: 14-15-B-58F4-101A46-2505-1458FC4637-00 1 BFY: 14 EFY: 15 Fund: B Budget Org: 58F4 Program (PRC): 101A46 Budget (BOC): 2505 DCN - Line ID: 1458FC4637-001 Funding Flag: Complete Funded: \$60,000.00</p> <p>The obligated amount of award: \$60,000.00. The total for this award is shown in box 17(i).</p>					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$0.00

COR: K.F. Roos
Alt COR: Allison Costa
Contract: EP-BPA-12-H-0300

STATEMENT OF WORK
Indonesia: Resource Assessment
Call 13-114

I. BACKGROUND

The *Global Methane Initiative* (GMI) is an international partnership program designed to reduce methane emissions from livestock and agro-industrial wastes; provide renewable energy; promote other environmental and human health benefits; and enhance rural economic development. Development of environmentally sound practices in the agricultural sector, one of 5 GMI sectors entails a number of activities, technical approaches, and strategies recognizing that these emissions are from a multitude of smaller decentralized facilities located in various climates, cultures, and economies when compared to fewer and larger centralized sources such as landfills, coal mines, municipal wastewater, and natural gas systems.

Livestock and agro-industrial wastes are considered high strength and low volume substrates and are sources of methane emissions, have negative impacts on surface and ground water and can transmit diseases. As a first step towards developing programs that deliver on the ground *methane reducing technologies* (MRT's) the *Global Methane Initiatives Agricultural sector* (GMI_{AG}) characterizes sector and sub-sector business operations and waste management systems, develops methane emission profiles, identifies reduction opportunities and develops effective implementation strategies to reduce sector specific emissions. In many cases emissions are reduced through biological processes that stabilize biodegradable fractions, collect the off-gases, and combust these off-gases in various energy and non-energy producing processes. Alternatively, and where appropriate, GMI introduces livestock waste handling methods which do not emit methane.

GMI_{AG} has active operations in Asia as this region has the majority of methane emission in the livestock and agro-industrial sector as well as rice and other agricultural emission sources. Examples of operational programs in Asia can be found in China, Vietnam, Thailand and the Philippines. EPA has recently engaged Indonesia in a sector discussion to reduce methane from Indonesia's *Palm Oil Industry* which has grown into a large agricultural enterprise and as such GMI_{AG} is seen as being a lead implementation entity for reducing methane in the Indonesian agricultural sector including *Palm Oil*. This SOW describes in detail the type of preliminary work that shall be completed to characterize the sector, develop a sector emission profile, and other industry elements requiring assessment.

II. SOW OVERVIEW

This SOW consists of 1 Task and five inter-related subtasks. The objective of these subtasks is to develop a firm understanding of Indonesia's *Palm Oil Industry* by conducting a set of assessments and characterizations to determine an appropriate GMI_{AG} approach and role to reduce methane emissions from that sector. Methane emissions occur in this sector when *Palm Oil Mill Effluent* (POME) is disposed of in open lagoons where anaerobic conditions stabilize the remaining organic fraction and emit methane as a by-product of the anaerobic process. Other important transformations and reductions also occur that can have favorable impacts on water quality and improves sanitation and health. An additional two high methane emission agricultural sectors shall also be identified and characterized as part of the POME characterization.

As such the contractor shall conduct the following 5 sub-tasks and develop a set of industry, market and technical reports that characterizes methane emissions from the Indonesian palm oil sector plus two additional high emission sectors. These characterizations shall also assess the MRT supply and service markets, identify market barriers and accelerators to MRT's and identify MRT's that are appropriate, affordable and replicable for those sectors. These sub-tasks are:

- **Sub-task A:** Develop a *Resource Assessment (RA)* report for three agricultural sectors which includes the *Palm Oil Industry*.
- **Sub-task B:** Develop an *Industry Characterization and Technology Barrier Assessment* report.
- **Sub-task C:** Develop a report identifying *Appropriate MRT Options and Financial Performance*.
- **Sub-task D:** Develop a report assessing the Supply and Service Markets for MRT's.
- **Sub-task E:** Conduct an *Assessment Mission* as basis for developing the sub-tasks above.

These subtasks are discussed in greater detail below.

III. TASK DESCRIPTIONS

TASK 1: ASSESSMENT OF PALM OIL INDUSTRY METHANE EMISSIONS, SUPPLY MARKETS, BARRIERS AND APPROPRIATE TECHNOLOGIES

OVERVIEW

This task consists of a series of inter-related sub-tasks that are addressed individually in the subtask sections below. The purpose of these subtasks is to characterize the top 3 methane emitting industries within the agricultural sector, where the *Palm Oil processing sector* shall be one of these industries. The deliverables for these characterizations shall be a series of reports that provide a summary of Indonesia's major agricultural emission industries. These reports shall include the following:

- Industry waste management processes;
- The industries position and understanding of MRT's;
- The level of supply and services available through local market and equipment distribution mechanisms;
- The barriers which limit the adoption rate of MRT's;
- Accelerators that can increase the adoption rate; and
- Identification of MRT'S considered appropriate for the waste management systems found in these industries.

The findings of these activities would form the basis for developing a GMI_{Ag} implementation plan for all, some or none of these industries depending on the findings.

The assessments conducted under the subtasks below shall be based on one Assessment Mission that shall be conducted after all subtask work plans are completed and is discussed further in subtask E.

SUB-TASK A: Resource Assessment

Under this sub-task the contractor shall provide the necessary support to develop a Resource Assessment (RA) report of the Palm oil processing industry which handles Palm Oil Mill Effluent (POME), plus 2 additional industries as identified. The RA shall include waste processing and waste management methods used across sector scales to develop and rank methane emission profiles and reduction potentials in the agro-industrial sector. Examples of these RA's can be found at the GMI website under Agriculture and a sample RA report is attached in Annex I.

This task shall use the same approach used in developing previous RA's. The contractor shall also implement the following approach to identify the additional two high emission sectors under this SOW.

1. Conduct a *Preliminary Assessment* (PA) which identifies and ranks methane emitting industries based on reasonable allocations of waste management processes, scales, and scale distribution such as large, medium, and small. The PA shall be based on credible reported data, such as provided through the *Food and Agricultural Organization* (FAO), industry trade groups, publications, and other sources. The purpose of a PA is to develop a basic understanding of industry operations, scales, processes used, and an initial emission profile..
2. The PA is then used as the basis to organize and develop an AM that visits a randomly selected set of facilities and scales to characterize industry processes and identify the number and scales of facilities using these processes. These findings are then used to develop revised emission profiles for the identified sectors according to *Inter-Governmental Panel on Climate Change* (IPCC) guidelines. There shall be enough facility evaluations to support a high level of confidence in the assessment and a discussion of this confidence level and approach included in the RA report.

The RA report shall be organized and outlined in a manner consistent with other RA reports. The RA shall be limited to up to 100 pages. This report shall also delineate what the reduction potential is relative to the intensity of industry barriers that may limit market demand for adopting MRT's in these industries. These barriers may be internal, caused by the industry, or their physical locations, or external which could be policy or regulatory driven. The barrier and identification of appropriate MRT's shall be separate reports as described in subtask B of this SOW.

The mini-RA shall also be sensitive to and include an assessment, if needed related to *nitrous oxide* (N₂O) emissions. N₂O emissions occur when anaerobic processes are followed by aerobic processes which are quite common in wastewater treatment systems when a discharge standard is required. The assessments shall therefore assess what processes or other technical interventions are used to process these industry specific wastes that result in emissions of N₂O. Under this approach a *net emissions* reduction can be estimated.

As the first activity under this subtask, the contractor shall develop a work plan that provides the approach, informational categories, analytic considerations and timeline among other key considerations to develop the PA and RA. The work plan shall become a PA and AM guide that outlines and identifies the key activities, meeting types, and informational aspects required to develop a representative Pan and a comprehensive RA. The work plan shall also provide the basis for outlining the RA report, its chapters, and analytical requirements.

DELIVERABLES: Subtask A – RA

The deliverables and deliverable time line for Sub-task A is provided in Table 1 below.

Table 1: Subtask A - RA Deliverables

PRODUCT	TIMELINE
1. <u>Work Plan Development</u>	
Develop a draft work plan that provides the pre-assessment and assessment approach and identifies the key assessment activities and informational elements including a timeline of activities.	Within 20 days of receiving TO award notification
Final work plan	Within 5 days of receiving COR comments or questions.
2. <u>Preliminary Assessment</u>	
Conduct and develop a draft report of up to 20 pages summarizing the	According to the work plans time line.

preliminary assessment findings and include any identifiable issues, constraints, and concerns.

Final pre-assessment report

Within 5 days of receiving COR comments or questions.

3. Conduct Assessment Mission

See subtask E

See subtask E

4. RA report

Develop draft RA following the outline used in previous RA's and include the additional elements identified in the Task 1 discussion.

According to the work plan and draft RA report completed within 30 days of assessment mission completion.

Final RA.

Within 10 days of receiving COR comments.

SUB-TASK B: Industry Characterization and Technology Barrier Assessment

The purpose of this subtask is to develop a report that provides an understanding of the identified sectors organization such as cooperatives or other business structures, their decision making process related to new technology investment outside of their main business product(s), identify the sectors position, understanding, and experience as related to MRT's, their understanding of technical and investment considerations relative to the technologies environmental and financial performance, operating requirements, and safety concerns among other key considerations.

The deliverables for this subtask shall be three (3) reports as follows:

1. A set of three (3) reports detailing the findings within these industries of up to 25 pages for each report; and
2. An Executive Summary summarizing all 3 industries and key findings of up to 8 pages

The industry and barrier characterization shall also include energy use profiles at various scales, and where useful, relative to the various fuels used in the sector to transport, process, distribute, manage and dispose of industry specific waste to understand where and how much energy is used at the facility level. These profiles shall be based on historical data such as utility billing history and other reliable sources. Seasonality impacts may affect the availability and cost of some of these fuels and as such shall be considered in this assessment. Energy profiles shall be used to develop energy use scenarios using MRT's relative to the historical profile, MRT costs, and other considerations to identify viable gas use options for the industry.

This subtask shall also include an assessment of the barriers that limit market demand and the adoption rate for methane reducing technologies including drivers that accelerate MRT "push" or "pull" forces to facilitate technology adoption and replication. As noted in subtask A this assessment shall provide the basis for estimating methane reduction potentials¹ relative to the intensity of these barriers and drivers across the various emission industry scales. Examples of market barriers can be financial such as limited access to capital, unwillingness to provide financing to new technologies. Other barriers could be internal to the industry such as lack of understanding, poor past experiences with MRT's which are part of the industry characterizations above. Other barriers can also be policy driven such as regulatory and may include discharge standards,

¹ Emission reduction potential shall be based on *Net Reductions where possible*. Net reduction account for increases or decreases in other GHG's emissions caused by intervening processes such as MRT's, aeration, gravity separation, composting etc..

stringent utility inter-connection requirements, or unfavorable energy rate structures. Alternatively drivers that can accelerate MRT's shall also be identified and may include methane reducing, or renewable energy policies that mandate various practices or mechanisms that facilitate technology adoption through attractive financing, energy premiums, or subsidies among other effective instruments.

As the first activity in this subtask, the contractor shall develop a work plan that includes an industry characterization, and market barrier and driver assessment approach. The work plan shall include identification of the key characterization and assessment analytic elements, required information categories, and timeline of activities among other considerations to develop a comprehensive report that provides the necessary depth to develop an understanding of the industry and its barriers that may impact the industries reluctance, or accelerate their rate of adopting MRT's to manage organic substrates in the target sectors. The work plan shall also provide the reports outline and chapters.

DELIVERABLES: Subtask B- Industry Characterization and Technology Barrier Assessment

The deliverables and deliverable time line for Sub-task A is provided in Table 2 below.

Table 2: Subtask B- Industry Characterization and Technology Barrier Assessment Deliverables

PRODUCT	TIMELINE
5. <u>Work Plan Development</u>	
Develop a draft work plan that provides the approaches for conducting the industry characterization and market barrier assessment including the key activities and informational elements including a timeline of activities.	Within 14 days of receiving TO award notification
Final work plan	Within 5 days of receiving COR comments or questions.
6. <u>Conduct Assessment Mission</u>	
See subtask E	See subtask E
7. <u>Develop Reports</u>	
Develop a draft <i>Industry Characterization and Market Barrier</i> report.	According to the work plan however no later than 45 days from the date the last subtask work plan becomes final
Final reports	According to the work plan timeline.

Subtask C: Appropriate Methane Technology Options and Financial Performance

The objective of this subtask is to develop a report that identifies MRT's and gas use processes that are appropriate for the identified industries including the economics of these technologies under various energy use scenarios that shall be developed based on the industry energy profiles discussed in Subtask B. In many cases appropriate technologies consist of simpler intermediate technologies where local equipment, design and service entities are used. In many cases these systems also do not include the level of redundancy found in foreign supplied technologies or high tech materials and components used in the design and operation of the MRT.

Undoubtedly an array of methane reducing technologies exist that may be appropriate candidates for industry processing applications. Some examples of these technologies are:

- Conventional above ground tanks fabricated from locally available materials such as concrete, prefabricated steel or fiberglass, or other materials;
- Flat, or bubble type inflatable covered anaerobic lagoons;
- Tubular, flow through type MRT's, a relatively new technology utilizing high and low density polyethylene pre-fabricated tubes which have been operated at smaller farm scales and more recently have also operated successfully at larger scales. Tubular technologies are also continuing to be scaled up to the equivalent of about 200 sow-farrow-finish farms, or about 2,000 standing pigs of various types;
- Other technologies could include below ground tanks either mixed or unmixed, hybrids of the above MRT's, among other potential candidate technologies.

These technologies can also be continuously or intermittently mixed/stirred at high and low rates, or unmixed, have sludge management components, can be heated or unheated; have combined or separate gas storage systems; among other combinations. These operational considerations shall be based on specific waste physical and chemical properties including pre-treatment considerations such as separation (mechanical and gravity) processes may also be necessary. The contractor shall include these types of technical considerations as part of the technical approach to identify appropriate MRT's for the identified industries.

MRT's also require a gas combustion device(s) these may include conventional medium BTU reciprocating engines for corrosive gases, micro-turbines, boilers, furnaces, flares, and other devices that combust gas, or convert gas into non-methane forms. Many times gas use processes require gas conditioning to reduce water saturation, remove corrosive constituents in the gas, compress gas, and other requirements. These and other gas use considerations shall also be included in developing an appropriate MRT identification approach.

As a first step the contractor shall evaluate existing MRT's that are in operation at commercial scales using the specific industry wastes in the context of tropical developing countries. The identification approach shall also consider affordability, operational requirements and replicability in the target sectors as these are critical factors in determining what is appropriate relative to the technical considerations above. As such a key aspect of this subtask shall be to develop financial and operational considerations for these technologies. This would include costs of the technology type and gas use process as related to the initial investment, operation and maintenance including provisions for parts replacement and significant maintenance such as major overhauls, among other considerations.

Similarly the financial benefits of these technologies and gas use processes shall be evaluated including the environmental and other benefits which shall be financially quantified where possible. These technologies and gas use processes shall be financially evaluated as *simple payback*, *net present value* (NPV), and *internal rate of return* (IRR) using reasonable life times and O&M assumptions. The costs and benefits shall also be based on Indonesian price structures and representative energy, or other rates if available, or normalized to account for pricing differences across countries. Ideally Indonesia already has examples of these technologies in operation and "as built costs" in countries with similar characteristics such as China, Vietnam, the Philippines etc. may be available to develop representative cost curves.

The contractor shall also rank these technologies in order of impact relative to scale and financial performance. The contractor shall also consider that various scales could trigger the use of other more cost effective technologies. For example GMI_{Ag} has found that tubular technologies demonstrate greater cost efficiency at smaller scales and at medium to larger scales technology cost effectiveness suggests shifting to covered lagoons. As such these cross over points shall be considered in this analytic work where possible. Similarly when separation into drying beds is considered an additional revenue stream becomes available while also incurring additional cost. For example GMI_{AG} has found that the sale of stabilized processed solids can

generate greater revenues than the electric, or energy component, The contractor shall also recognize that this analysis shall not include technologies that are not commercially proven such as MRT's that are still in the R&D, pilot, or pre-commercial phases of development.

The final deliverable for this subtask shall be a report of up to 60 pages entitled, "*Appropriate Methane Reducing Technologies that Reduce Methane Emissions from Agricultural Sources in Indonesia*". This report shall include a narrative of purpose, selection criteria, analytic approach, and conclusions which is written in an easy to understand but technical and financial manner for distribution to the Palm Oil Industry, private and public sector among other audiences. This analysis shall also cross walk the technologies currently operating on the identified industry wastes in Indonesia with those technologies that are identified as appropriate technologies based on the selection criteria of this analysis. These findings may suggest that these technologies are already well underway in Indonesia.

The first activity under this subtask, the contractor shall develop a work plan that identifies the approach, criteria, assumptions, key activities, informational aspects among other considerations as a basis for the analysis. In this regard the contractor shall review existing and credible technical, economic and other useful products such as reports and analysis developed by the private sector, or under currently operating development programs such as USAID's renewable energy program, Winrock's CIRCLE program, and similar programs for the identified industry wastes in Indonesia. The work plan shall also provide the template for outlining the reports, its chapters, analytic approach, and finding.

DELIVERABLES: SUB-TASK C

The deliverables and deliverable time line for Sub-task C is provided in Table 3 below.

Table 3: Deliverables: Subtask C – Identification of Appropriate MRT Options and Financial Performance

PRODUCT	TIMELINE
1. <u>Work Plan Development</u>	
Develop a draft work plan that provides the technology identification and cost determination approach including the key activities and informational elements including a timeline of activities.	Within 14 days of receiving TO award notification
Final work plan	Within 5 days of receiving COR comments or questions.
2. <u>Conduct Assessment Mission</u>	
See subtask E	See subtask E
3. <u>Develop report</u>	
Develop a draft report and economic profiles.	According to the work plan timeline
Final report	Within 7 days of receiving COR comments

Subtask D: Assessment of Supply and Service Markets

The objective of this subtask is to develop a report that summarizes the MRT supply and service markets capacity to provide appropriate design and service support for the specific MRT's of industry substrates. This subtask shall also include and assessment of the countries capacity to deliver appropriate MRT's as identified

in subtask C that are affordable, replicable, and able to operate over the long term. This assessment is perhaps the most critical market component for a successful, competitive and sustainable technology supply market. The other critical component is a demand market with enough critical mass to develop a significant number of these technologies which is assessed in subtask B. When these two components exist and are robust a sustainable and mature methane recovery industry emerges.

Unfortunately in many countries these market forces are not present as the technology demand is limited or non-existent. These market conditions can lead to poor design and service markets as the investment to develop a specialized MRT market for the industry specific wastes may be constrained. Often times demand limitations also result in international satellite design, equipment and service distributors that emerge to meet the limited needs of a depressed market.

When market demand is limited to international entities providing technical services the technology choice is often times inappropriate as it may be technically complex in design and operation, depend on imported parts, specialized service skills, among other limitations which may also need to be provided from an international entity. As such the combination of these factors can lead to technologies that could be considered inappropriate as they may not be affordable, financially unjustifiable and have very little if any replication potential. These market conditions often times result in underperforming or failed systems after a few years of operation. Moreover when these types of MRT's are used they also influence the perception of the potential demand market that these technologies should be avoided as they are prone to underperform, fail, are financially undesirable, or locally inoperable. These perceptions exacerbate an already depressed market and are difficult barriers to overcome without improving local market supply and services.

Under this subtask the contractor shall develop a report of up to 60 pages that summarizes the MRT supply and service markets capacity to provide appropriate design and service support for the specific industry wastes to develop the foundation of what types of technologies are available, by what entities, foreign or national, their cost structure if not included in subtask C including availability of replacement parts, costs, delivery timelines, and installation and maintenance services. The report shall also identify and list the types of MRT's that have been installed and operating on the industry specific wastes identified in the mini-RA including the total as built installed costs.

The findings of this report shall also be cross walked with those technologies which were identified as appropriate in subtask C. This cross analysis shall identify areas of market strengths as well as weaknesses. The findings under this and other assessments in this SOW would provide a significant insight into developing the GMI_{Ag} role and implementation plan for these industries, if any active role is suggested. This cross analysis shall also focus on the availability of locally vs. imported equipment and the diversity of equipment availability, quality, and cost that could be used in developing these technologies recognizing that these considerations impact financial performance, market sustainability which influence market demand.

As the first step under this activity, the contractor shall develop a work plan that identifies the market assessment approach, criteria, informational needs, key activities, and timeline among other considerations as a basis for this assessment. In this regard the contractor shall review existing and credible technical, economic and other useful sources of information such as product reports, case studies, MRT facility visits, vendor meetings, and other methods to develop the assessment. Other sources of market capacity determinations may be to conduct discussions with program officials under USAID's renewable energy program, the CIRCLE program under Winrock, and similar programs. The work plan shall also provide the template for outlining the reports, its chapters, analytic approach, and finding.

DELIVERABLES: SUB-TASK D

The deliverables and deliverable time line for Sub-task D is provided in Table 4 below.

Table 4: Deliverables: Subtask D

AgSTAR Call 13-114 (Roos) Indonesia Resource Assessment - competitive

PRODUCT	TIMELINE
1. <u>Work Plan Development</u>	
Develop a draft work plan that provides the approach for conducting the market assessment including the key activities and informational elements including a timeline of activities.	Within 14 days of receiving TO award notification
Final work plan	Within 5 days of receiving COR comments or questions.
2. <u>Conduct Assessment Mission</u>	
See subtask E	See subtask E
3. <u>Develop Report</u>	
Develop a draft report.	According to the work plan timeline
Final report	Within 7 days of receiving COR comments.

SUB-TASK E: Assessment Mission

The characterizations and assessments conducted under subtasks A D shall be based on one assessment mission that shall be conducted after all subtask work plans are completed. The purpose of the work plans are to guide the mission and contain the subtask approach, informational categories, analytic, assessment and characterization methods, and time line of activities among other key elements. This mission shall be limited to one mission, of up to 14 days, 3 days for travel, 1 day for "in-country" team preparation, and 10 days of subtask related work. The mission team shall limited to up to 1 sector process expert and 2 assistants with appropriate backgrounds relative to the subtask. The assessment mission shall be conducted within 30 days from the date the last subtask work plan becomes final. All subtask work plans shall be due with 14 days of award notification for this SOW.

Preparation for this mission shall require that facilities, managers and other entities are identified; meeting schedules confirmed; travel arrangements made; and facility access is granted for mission members prior to the mission start date. This preparation is typically done by personnel within the country that are familiar with the industry. In-country personnel may also have the necessary skills and language capability to conduct the mission and provide post-mission follow-up therefore negating the need for an international team. *This would be a preferred mode to conduct the assessment mission and shall be considered in the evaluation criteria for this task.* Award for this SOW shall be on a task basis and therefore the contractor shall be responsible for coordinating all 5 subtasks.

The contractor shall also post all reports developed under this SOW on the GMI website following EPA web guidelines.

As the first step under this activity, the contractor shall develop a work plan that provides the mission approach including facility identification; key industry, vendor and other meetings; site visits, other key activities and timeline among other considerations as a basis for this assessment.

DELIVERABLES: SUB-TASK E

The deliverables and deliverable time line for Sub-task E is provided in Table 5 below.

Table 5: Deliverables: Task 1: Subtask E

PRODUCT	TIMELINE
1. <u>Assessment Mission</u>	
Prepare for and complete "in-country" assessment mission based on findings of the PA and mission work plan components.	According to the work plan however no later than 45 days from the date the last subtask work plan becomes final.
IV. [EVALUATION FACTORS – I requested clarification on this section as well]	
Technical Approach: The work contained in this SOW requires a diverse set and specialized set of skills. As such the contractor shall be evaluated for their approach in developing similar agricultural waste management related work as follows:	
<ul style="list-style-type: none"> • Characterizations, assessments, and evaluations of high strength agricultural waste waters and industry sectors and sub-sectors; • Developing, designing, assessing, and evaluating commercially proven MRT's in tropical developing countries such as mixed and unmixed covered lagoons, tubular reactors, above and below ground tanks; and gas uses such as flares, cook stoves, engines, and other commercially accepted energy applications used in this sector. These expertise shall apply to small-medium and large scale applications; • Developing, designing, assessing, and evaluating pre-treatment, primary, secondary, and tertiary treatment processes for high strength wastes commonly found in tropical developing countries including other GHG emissions from these processes; • Financial and economic analysis of these processes such as life cycle economic analysis and cost curve development for MRT's, including value added processes such as separation processes and drying beds. • Experience in developing methane emission and other agriculturally based emission assessments from baseline high strength waste management systems using IPCC methodologies. • Understanding business approaches, metrics, values, and the forces that mold the business approach for the livestock and agro-industrial sectors in tropical developing countries. 	

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 001		3. EFFECTIVE DATE 05/06/2014		4. REQUISITION/PURCHASE REQ. NO. PR-OAR-14-00957	
5. PROJECT NO. (If applicable)		6. ISSUED BY HPOD		7. ADMINISTERED BY (If other than Item 6)	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460		8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE (b)(4) LEXINGTON MA 024213136		9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11)	
CODE (b)(4)		FACILITY CODE		10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BFA-12-H-0031 EP-B14H-00057 10B. DATED (SEE ITEM 13) 03/07/2014	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
X	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☒ is not, ☐ is required to sign this document and return _____ 0 _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

GSA Contract #: GS-23F-0225M

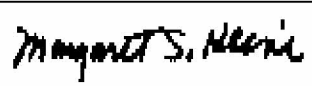
DUNS Number: (b)(4)

This modification is to correct the funding line of accounting by deleting the accounting code and replacing it with a new line of accounting code (GMI funds) for the exact dollar amount of \$60,000. \$59,985 is needed to fully fund this task order through its completion date of 6 May 2015, contingent upon exercise of the option year.

Other Direct Cost: expenditures for any non fungible purchases must be cleared by the EPA Contracting Officer.

As required by regulation, property reports shall be sent to the EPA Contract Property Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Margaret Kline	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16C. DATE SIGNED 05/06/2014	16B. ELECTRONIC SIGNATURE 

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED

EP-BPA-12-H-0031/EP-B14H-00057/001

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NAME OF OFFEROR OR CONTRACTOR

EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Coordinator and a copy to the COR and Contracting Officer. The COR shall not dispose of any property without Contracting Officer authorization,</p> <p>COR: Kurt Roos Alt COR: Allison Costa CHANGES FOR ACCOUNTING CODE: 14-15-B-58F4-101A46-2505-1458FC4637-001 Amount changed from \$60,000.00 to \$0.00</p> <p>NEW ACCOUNTING CODE ADDED: Account code: 13-14-BR-58FOX15-101A46-2505-1458FC4704-001 Beginning Fiscal Year 13 Ending Fiscal Year 14 Fund (Appropriation) BR Budget Organization 58FOX15 Program (PRC) 101A46 Budget (BOC) 2505 DCN-LineID 1458FC4704-001 Amount: \$60,000.00</p> <p>Delivery Location Code: OAR/OAP/CCD OAR/OAP/CCD US Environmental Protection Agency 1200 Pennsylvania Avenue NW Mail Code: 62107J OAP/CCD Washington DC 20460 USA</p> <p>Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive Durham NC 27711</p> <p>FOB: Destination Period of Performance: 03/07/2014 to 05/06/2015</p>				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 002		3. EFFECTIVE DATE 06/04/2014		4. REQUISITION/PURCHASE REQ. NO. PR-OAR-14-01104	
5. PROJECT NO. (If applicable)		6. ISSUED BY HPOD		7. ADMINISTERED BY (If other than Item 6)	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460		8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE (b)(4) LEXINGTON MA 024213136		9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11) 10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BFA-12-H-0031 EP-B14H-00057 10B. DATED (SEE ITEM 13) 03/07/2014	
CODE (b)(4)		FACILITY CODE			

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required) Net Increase: \$59,985.00
See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) mutual agreement

E. IMPORTANT: Contractor ☒ is not, ☐ is required to sign this document and return _____ 0 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

GSA Contract #: GS-23F-0225M

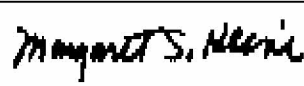
DUNS Number: (b)(4)

Obligate \$59,985 in GMI funding to fully fund this task order at its total estimated cost of \$119,985. The completion date is 6 May 2015, contingent upon exercise of the option year.

Other Direct Cost: expenditures for any non fungible purchases must be cleared by the EPA Contracting Officer.

As required by regulation, property reports shall be sent to the EPA Contract Property Coordinator and a copy to the COR and Contracting Officer. The COR shall not dispose of any Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Margaret Kline	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. ELECTRONIC SIGNATURE 	16C. DATE SIGNED 06/04/2014

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED

EP-BPA-12-H-0031/EP-B14H-00057/002

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NAME OF OFFEROR OR CONTRACTOR

EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	property without Contracting Officer authorization, COR: Kurt Roos Alt COR: Allison Costa NEW ACCOUNTING CODE ADDED: Account code: 13-14-BR-58F0X15-101A46-2505-1458FC4730-001 Beginning FiscalYear 13 Ending Fiscal Year 14 Fund (Appropriation) BR Budget Organization 58F0X15 Program (PRC) 101A46 Budget (BOC) 2505 DCN-LineID 1458FC4730-001 Amount: \$59,985.00 Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive Durham NC 27711 FOB: Destination Period of Performance: 03/07/2014 to 05/06/2015				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 003		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO.	
5. PROJECT NO. (If applicable)		6. ISSUED BY HPOD		7. ADMINISTERED BY (If other than Item 6) CODE	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460		8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE (b)(4) LEXINGTON MA 024213136		9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11)	
CODE (b)(4)		FACILITY CODE		10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BFA-12-H-0031 EP-B14H-00057 10B. DATED (SEE ITEM 13) 03/07/2014	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: Mutual Agreement of the Parties
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

GSA Contract #: GS-23F-0225M

DUNS Number: (b)(4)

The purpose of this modification is to extend the period of performance of this call order, from 06 May 2015 to 30 June 2015 at no cost to the government. All other terms and conditions remain unchanged.

COR: Allison Costa

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Faye Sas	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED 06/15/2015

NAME OF OFFEROR OR CONTRACTOR
EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center Mail Drop D143-02 109 TW Alexander Drive Durham NC 27711 Period of Performance: 03/07/2014 to 06/30/2015				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 004		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO.	
5. PROJECT NO. (If applicable)		6. ISSUED BY CODE HPOD		7. ADMINISTERED BY (If other than Item 6) CODE	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460		8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE (b)(4) LEXINGTON MA 024213136		9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11)	
CODE (b)(4)		FACILITY CODE		10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BFA-12-H-0031 EP-B14H-00057 10B. DATED (SEE ITEM 13) 03/07/2014	

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Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: By Mutual Agreement of the Parties
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

GSA Contract #: GS-23F-0225M

DUNS Number: (b)(4)

The purpose of this modification is to extend the period of performance of this call order, from 30 June 2015 to 31 August 2015 at no cost to the Government. All other terms and conditions remain unchanged.

COR: Allison Costa

LIST OF CHANGES:


Reason for Modification : Supplemental Agreement for work within scope

Period Of Performance End Date changed from 06-MAY-15 to 31-AUG-15

Total Amount for this Modification: \$0.00

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Jeffrey Martin	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 06/15/2015

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED

EP-BPA-12-H-0031/EP-B14H-00057/004

PAGE

OF

2

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NAME OF OFFEROR OR CONTRACTOR

EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	New Total Amount for this Version: \$0.00 New Total Amount for this Award: \$119,985.00 Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center Mail Drop D143-02 109 TW Alexander Drive Durham NC 27711 Period of Performance: 03/07/2014 to 08/31/2015				

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1 2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 09/23/2014		2. CONTRACT NO. (If any) EP-BPA-12-H-0031		6. SHIP TO: a. NAME OF CONSIGNEE OAR/OAP/CCD	
3. ORDER NO. EP-B14H-00221		4. REQUISITION/REFERENCE NO. PR-OAR-14-01424			
5. ISSUING OFFICE (Address correspondence to) HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460				b. STREET ADDRESS US Environmental Protection Agency 1200 Pennsylvania Avenue NW Mail Code: 62107J OAP/CCD	
7. TO: DICKRAN BABIGIAN a. NAME OF CONTRACTOR EASTERN RESEARCH GROUP, INC. b. COMPANY NAME				c. CITY Washington	
				d. STATE DC	
				e. ZIP CODE 20460	
f. SHIP VIA				8. TYPE OF ORDER	
				<input type="checkbox"/> a. PURCHASE <input checked="" type="checkbox"/> b. DELIVERY REFERENCE YOUR: Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.	
d. CITY LEXINGTON		e. STATE MA		f. ZIP CODE 024213136	
9. ACCOUNTING AND APPROPRIATION DATA See Schedule				10. REQUISITIONING OFFICE OAR	

11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input type="checkbox"/> a. SMALL <input checked="" type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM <input type="checkbox"/> h. EDWOSB				12. F.O.B. POINT Destination	
13. PLACE OF a. INSPECTION Destination		b. ACCEPTANCE Destination		14. GOVERNMENT B/L NO.	
				15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	
				16. DISCOUNT TERMS	

17. SCHEDULE (See reverse for Rejections)

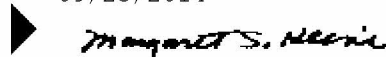
ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	GSA Contract #: GS-23F-0225M DUNS Number: (b)(4) The total estimated cost for this task order entitled "Philippine Technical Training in CAL and TADT Technologies" is \$202,006 for 757 hours for all tasks. The Continued ...					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
	21. MAIL INVOICE TO:						
	a. NAME RTP Finance Center						\$202,006.00
	b. STREET ADDRESS (or P.O. Box) US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts						
c. CITY Durham				d. STATE NC	e. ZIP CODE 27711	\$202,006.00	17(i) GRAND TOTAL

22. UNITED STATES OF

AMERICA BY (Signature)

09/23/2014



ELECTRONIC SIGNATURE

23. NAME (Typed)

Margaret Kline

TITLE: CONTRACTING/ORDERING OFFICER

ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION

PAGE NO
2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 09/23/2014	CONTRACT NO. EP-BPA-12-H-0031	ORDER NO. EP-B14H-00221
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0002	<p>task order is fully funded through its completion date of 22 September 2015.</p> <p>COR: K. Roos 202-343-9041 Alt COR: Allison Costa 202-343-6498 Admin Office: HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460</p> <p>Accounting Info: 14-15-B-58F4-101A46XP4-2505-1458FC4814-002 BFY: 14 EFY: 15 Fund: B Budget Org: 58F4 Program (PRC): 101A46XP4 Budget (BOC): 2505 DCN - Line ID: 1458FC4814-002 Period of Performance: 07/16/2012 to 07/15/2017</p> <p>PR-OAR-14-01424 , document # 1458FC4814 For the amount \$202,006 Using funding code 58F4 101A46XP4 (EPA-GMI)</p> <p>Period of Performance: 08/01/2014 to 03/01/2015</p> <p>The obligated amount of award: \$202,006.00. The total for this award is shown in box 17(i).</p>				202,006.00	

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$202,006.00

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 001		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO.	
5. PROJECT NO. (If applicable)		6. ISSUED BY HPOD		7. ADMINISTERED BY (If other than Item 6)	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460		8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE (b)(4) LEXINGTON MA 024213136		9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11)	
CODE (b)(4)		FACILITY CODE		10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BFA-12-H-0031 EP-B14H-00221 10B. DATED (SEE ITEM 13) 09/23/2014	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
X	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☒ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)


GSA Contract #: GS-23F-0225M

DUNS Number: (b)(4)

The purpose of this modification is to correct errors in the stated period of performance in the original award document of the subject call order. The correct period of performance for this call order is 09/23/2014 thru 09/22/2015. All other terms and conditions remain unchanged.

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Jeffrey Martin	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 05/04/2015

NAME OF OFFEROR OR CONTRACTOR
EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 09/23/2014 to 09/22/2015				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		PAGE OF PAGES 1 2		
2. AMENDMENT/MODIFICATION NO. 002		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)	
6. ISSUED BY HPOD		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460							
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)		(x)		9A. AMENDMENT OF SOLICITATION NO.			
EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE (b)(4) LEXINGTON MA 024213136				9B. DATED (SEE ITEM 11)			
		x		10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BPA-12-H-0031 EP-B14H-00221			
				10B. DATED (SEE ITEM 13)		09/23/2014	
CODE (b)(4)				FACILITY CODE			

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

- ☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
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	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☒ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

GSA Contract #: GS-23F-0225M

DUNS Number: (b)(4)

The purpose of this modification is to re-assign the administrative role of Contracting Officer's Representative to Allison Costa for the duration of this call order. All other terms and conditions remain unchanged.

COR: Allison Costa

202.343.6498

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Faye Sas	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED 06/01/2015

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED

EP-BPA-12-H-0031/EP-B14H-00221/002

PAGE OF

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NAME OF OFFEROR OR CONTRACTOR

EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 09/23/2014 to 09/22/2015				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 003		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO.	
5. PROJECT NO. (If applicable)		6. ISSUED BY HPOD		7. ADMINISTERED BY (If other than Item 6)	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460		8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE (b)(4) LEXINGTON MA 024213136		9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11)	
CODE (b)(4)		FACILITY CODE		10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BFA-12-H-0031 EP-B14H-00221 10B. DATED (SEE ITEM 13) 09/23/2014	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: By Mutual Agreement of the Parties
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

GSA Contract #: GS-23F-0225M

DUNS Number: (b)(4)

The purpose of this modification is to extend the period of performance of the subject call order to 30 November 2015, at no additional cost to the Government. All other terms and conditions remain unchanged.


LIST OF CHANGES:

Reason for Modification : Supplemental Agreement for work within scope

Period Of Performance End Date changed from 22-SEP-15 to 30-NOV-15

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Jeffrey Martin	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 09/22/2015

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED

EP-BPA-12-H-0031/EP-B14H-00221/003

PAGE

OF

2

2

NAME OF OFFEROR OR CONTRACTOR

EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 09/23/2014 to 11/30/2015				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 004		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO.	
5. PROJECT NO. (If applicable)		6. ISSUED BY HPOD		7. ADMINISTERED BY (If other than Item 6) CODE	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460		8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE (b)(4) LEXINGTON MA 024213136		9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11)	
CODE (b)(4)		FACILITY CODE		10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BFA-12-H-0031 EP-B14H-00221 10B. DATED (SEE ITEM 13) 09/23/2014	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: By Mutual Agreement of the Parties
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

GSA Contract #: GS-23F-0225M

DUNS Number: (b)(4)

The purpose of this modification is to extend the period of performance of the subject call order to 29 July 2016, at no additional cost to the Government. In addition, the role of Contracting Officer's Representative (COR) for this call order is re-assigned to Thomas Frankiewicz, and the role of Alternate Contracting Officer's Representative for this call order is re-assigned to Swarupa Ganguli. All other terms and conditions remain unchanged.

Contracting Officer's Representative (COR):

Thomas Frankiewicz

202.343.9232

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Faye Sas	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED 11/24/2015

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED

EP-BPA-12-H-0031/EP-B14H-00221/004

PAGE

OF

2

2

NAME OF OFFEROR OR CONTRACTOR

EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>frankiewicz.thomas@epa.gov</p> <p>Alternate Contracting Officer's Representative (ALT COR): Swarupa Ganguli 202.343.9732 ganguli.swarupa@epa.gov</p> <p>LIST OF CHANGES: Reason for Modification : Supplemental Agreement for work within scope Period Of Performance End Date changed from 30-NOV-15 to 29-JUL-16</p> <p>Contracting Officer Representative changed from Allison Costa</p> <p>to Thomas Frankiewicz</p> <p>Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711</p> <p>Period of Performance: 09/23/2014 to 07/29/2016</p>				

BPA: EP-BPA-12-H-0031

Call Order: EP-B14H-00221

Call Order Title: Philippine Technical Training in CAL and TADT Technologies (Revised)

STATEMENT OF WORK

I. BACKGROUND

An essential function of the Global Methane Initiative's (GMI) agriculture sector activities is to identify the existing capacity of Partner Countries to provide commercially proven anaerobic digestion (AD) technologies that are replicable and affordable to develop a viable AD industry. When countries are found to have limited or no capacity, GMI typically transfers appropriate AD technology by employing a technology transfer workshop that requires attendees to design, construct and operate specific AD systems at livestock and other agro-industrial facilities.

GMI has invested in capacity building activities in the Philippines for several years as part of the Philippine Methane Partnership. GMI has developed significant expertise in designing and implementing effective technology transfer workshops.

II. OBJECTIVES

The original objective of the SOW was to transfer design, construction and operation skills to a group of technicians for various types of AD technologies through two tasks.

Task 1: Technology transfer workshops of small-to-medium scale tubular anaerobic digesters in Bulacan and Laguna

Task 2: Technology transfer workshop of medium-to-large scale covered anaerobic lagoon digesters in Rizal

Due to the departure of staff with expertise in leading these workshops, this revised SOW will modify the original tasks to draw on the significant previous work in this area and develop training materials and plans for use by other members of the Philippine Methane Partnership and other interested GMI stakeholders. However, in lieu of actual workshop implementation, this SOW will focus on the development and dissemination of model training materials based on GMI's prior work in the Philippines.

III. SPECIFIC TASKS

Task 1: Transfer of Tubular Anaerobic Digester Technologies

Under task 1, the contractor shall provide the necessary technical and logistical support to prepare technology transfer workshop materials for the design, construction and operation of 1.1 and 2.2 meter diameter small-to-medium scale tubular AD systems. These tubular AD systems shall include separate biogas storages fabricated from high and low density polyethelyene (HDPE and LDPE) geo-textile materials.

The workshop materials shall provide technical content for a four to five day long workshop and shall follow a similar format as that used for the 2012 *Buklod Unlad Multi-purpose Cooperative* workshop in Batangas, Philippines implemented under the aforementioned TO 25. The materials shall consider that

previous workshops typically have entailed working with a swine cooperative to develop five to eight suitable sites for training purposes. Some of the sites were fully developed demonstration sites while others were in various stages of construction to allow for hands-on learning.

Additionally, training plans shall be developed that describe all aspects of workshop logistics to accompany the technical content. Logistical materials shall include information about typical materials needed for the workshop.

The contractor shall develop and provide the following items under this task:

Workshop Master Plan

A model workshop plan that provides guidance on the timeline of activities, training approach, topics, sites, site design plans, list of necessary materials and logistics shall be developed. This shall include general information about the criteria desired and/or needed for workshop sites. The plan shall also describe typical materials and equipment needed for these workshops, as well as information on suppliers and costs, based on experience from previous workshops and current updates.

Revision of Tubular AD Workshop Module

The tubular AD technical module (PowerPoint slides) forms the technical content and reference material used in the workshop and includes design, sizing, operation and other critical elements of tubular AD systems. The modules for tubular AD systems were developed and used in the previous Buklod Unlad workshop. The contractor shall revise and update these slides, as well as provide slide notes and/or talking points to accompany the presentation. Based on feedback from the previous workshop, revisions for consideration under this SOW include:

- Listing and specifications of new geo-textile materials and equipment.
- Design and fabrication elements of 1.1 and 2.2 meter diameter tubular AD systems including range of application scale, length to width ratio requirements and other important considerations.
- The comparative use of tubular, fixed, and stacked fixed domes in various terrains and the cost implications. GMI has developed a cost dataset on tubular, fixed and stacked fixed dome AD systems, which may be used for comparative financial analysis including key considerations affecting costs such as terrain, soil type, land value and other considerations that impact costs. This cost and consideration update may include a selection chart slide for small to medium scale tubular, fixed and stacked fixed dome AD systems based on these elements.

This module may also include the development of “exam” questions that serve as an indicator of the knowledge gained and skills learned as a result of completion of the training module.

Additionally, a simple spreadsheet design tool for AD systems on swine farms was developed and used in prior training workshops. Based on recommendations from attendees at the Tagatay workshop in 2011, this excel-based tool should be revised to be easier to understand and use. Multiple versions may be provided if it is determined that different forms of the tool (e.g. with macros versus without macros) would be useful for various audiences.

Workshop Summary (“Lessons Learned”) Report

The contractor shall visit previous workshop sites to develop a report describing key findings, results, effectiveness and issues identified from GMI’s previous work in the Philippine swine sector. These “lessons learned” should be designed to increase the effectiveness of transferring tubular AD system

technology by GMI or other stakeholders. In addition to previous workshop sites, the contractor may also interview previous trainees, collaborating organizations or other stakeholders or visit additional AD system sites in order to develop a more comprehensive outlook on GMI's impact in this sector.

Deliverables

<i>Deliverable</i>	<i>Due Date</i>
Draft Workshop Master Plan	Within 8 weeks of call order award
Final Workshop Master Plan	Within 4 weeks of receipt of comments on draft
Draft Updated Tubular AD Training Module	Within 8 weeks of call order award
Final Updated Tubular AD Training Module	Within 4 weeks of receipt of comments on draft
Draft Workshop Summary Report	Within 4 weeks of site visits
Final Workshop Summary Report	Within 3 weeks of receipt of comments on draft

Task 2: Transfer of Covered Lagoon Anaerobic Digestion Technologies

This task involves the development of a model technology transfer workshop for flat covered lagoon AD technologies. While covered lagoon AD systems using inflatable covers have been built in the Philippines, some of these have been destroyed due to high winds and other weather-related conditions in typhoon-prone regions of the country. Under this task, the contractor shall provide the necessary technical and logistical support to develop a technology transfer workshop module regarding the design, installation and operation of large scale flat covered lagoon AD systems.

If helpful for illustrative purposes, the workshop module materials can be modeled after conditions at the Diamond Field Farm, a 1,000 sow-farrow-finish farm near Antipolo, Philippines. At Diamond Field Farm, the waste management process train includes a solids separator, lift station, covered lagoon, sludge collection pit, and effluent storage. The covered lagoon AD design and specification was provided by GMI under TO 25. The technical plan was delivered and discussed with farm owner and manager, including follow-on meetings during installation by the COR. The farm owner planned to have the lagoon filled by June of 2014.

Similar to Task 1, both a workshop master plan and a training module shall be developed. The workshop parameters should assume that the module would be used for training sessions for approximately 15 attendees, carried out in a series of 2 or 3 phases over approximately a 30 to 60 day period, where each phase is about 4 to 5 days in duration to accommodate all aspects of the covered lagoon AD system installation. Suggested workshop phase details and other technical details related to the Diamond Field Farm can be found in Appendix 2. The training module may include all aspects of covered lagoon AD system design and sizing, including lagoon sizing, lining, gas take-off, cover assembly and installation, gas handling, gas transmission and gas use components. The module may also contain guidance on start-up, troubleshooting, operation, calibration and record keeping, according to Clean Development Mechanism guidelines.

The contractor shall develop and provide the following items under this task:

Workshop Master Plan

A model workshop plan that provides guidance on the timeline of activities, training approach, topics, sites, site design plans, list of necessary materials and logistics shall be developed. This shall include general information about the criteria desired and/or needed for workshop sites. The plan shall also describe typical materials and equipment needed for these workshops, as well as information on suppliers and costs, if available.

Development of Covered Lagoon AD Training Module

The covered lagoon AD training module (PowerPoint slides) forms the technical content and reference material used in a training workshop and includes design, sizing, operation and other critical elements of covered lagoon AD systems. A covered lagoon AD training module has not been developed under previous task orders, but the tubular AD training module may be used as an outline for this module where appropriate. Like the tubular AD training module, the contractor shall also develop talking points and/or slide notes to accompany the training presentation. This module may also include the development of “exam” questions that serve as an indicator of the knowledge gained and skills learned as a result of completion of the training module.

Deliverables

<i>Deliverable</i>	<i>Due Date</i>
Draft Workshop Master Plan	Within 8 weeks of call order award
Final Workshop Master Plan	Within 4 weeks of receipt of comments on draft
Draft Updated Covered Lagoon AD Training Module	Within 8 weeks of call order award
Final Updated Covered Lagoon AD Training Module	Within 4 weeks of receipt of comments on draft

Task 3: Dissemination of Call Order Materials

Due to GMI's decision not to implement the actual training workshops, EPA would like to encourage broad use of the materials developed under this task order. Therefore this task entails two parts: (1) meetings with GMI counterparts in the Philippines to share the deliverables developed under this Statement of Work, and (2) slight revisions to broaden the applicability of the materials to regions outside of the Philippines.

After development of the workshop master plans and training modules, the contractor shall organize a meeting with GMI's Philippine counterparts to showcase these deliverables and share ideas for their future use by Philippine Methane Partnership members. The contractor may also meet with representatives from Philippine swine farms, cooperatives, or other contacts from GMI's previous activities in the country for the same purpose. This trip shall be combined with the site visits in Task 1 to evaluate the impact of previous GMI activities.

Secondly, the plans and training modules should be revised to remove direct references to the Philippines and shared on the GMI website, with CCAC stakeholders, and other appropriate venues to encourage broad dissemination and use of these materials across the world.

Deliverables

<i>Deliverable</i>	<i>Due Date</i>
Plan & Organize Philippine Stakeholder Meetings	Within 4 months of Call Order Award
Draft International Training Plans and Modules	Within 1 month of finalization of related Task 1 and 2 materials
Final International Training Plans and Modules	Within 2 weeks of receipt of comments on draft materials

Task 4: Project Management

This task shall provide for management and oversight of all activities being undertaken by this call order. EPA expects that the contractor shall keep track of the status of all ongoing activities and deliver them on time, without reminder from the EPA COR. The contractor shall inform the EPA COR of any issues or problems encountered during the month or anticipated in the upcoming month(s). The contractor shall track budget by sub-task and provide a monthly summary to the EPA COR. Finally, the contractor shall provide a system, such as a web-based project site, to manage and provide version control of in-process deliverables.

Deliverables

<i>Deliverable</i>	<i>Due Date</i>
Monthly Activity Report	By the 15 th of each month

Appendix 1: Additional Considerations for the Tubular AD Technology Module

The purpose of this appendix is to provide additional details that pertain to the workshop approach, support, demonstration sites, duration, materials and equipment of Task 1 under this SOW.

Typical Workshop Site Development Details Based on Prior GMI Experience

Previous workshops have typically utilized a set of sites within pig cooperative jurisdictions in the Philippines. The sites were typically selected in consultation with the cooperatives, GMI Agriculture Subcommittee delegates and workshop organizers.

Typical workshops entail the development of five to eight workshop sites. Approximately half of the sites are workshop support sites in which only the tubular AD concrete work is completed and the workshop attendees complete the remaining components, including start-up. The workshop component is done in small groups with a designated technical lead. The remaining sites are fully operational demonstration sites producing combustible biogas and operating trouble free prior to the workshop.

Each demonstration and support site shall be fitted with an effluent storage pond to contain at least 35-45 days of stored effluent. The storage ponds shall be designed to appear as a planned engineered waste management system. Effluent storages may be constructed with packed earth when high clay content is found, or geo-textile lined (preferred) to prevent seepage into ground water, and include appropriate fencing to control access to the system and enhance safety. Material selection shall be decided by the lead technicians. The system elevations shall be designed based on gravity flow of influent and effluent.

Sites should be selected and have site plans completed prior to the development of a workshop. A site technical plan includes a site plan drawing showing the tubular AD system and sizes, consisting of canal connection(s) to the piggery, mix pit and digester, and digester connection to the effluent storage pond and disposal point. Plans also include the biogas pipe routing to the gas use point which in most cases will be a cook stove. In the past, the workshop organizer has provided the cook stove and small scale gas meters for the workshop sites. The site owners have agreed to provide supplemental labor such as masons and biogas pipe to develop the sites prior to the workshop. Table 1 lists sample sites, scale of operation, digester type, and site designation as either demonstration or support.

Table 1: Sites, Scale and ADT Type

Site Name	Cooperative	Farm Size at Capacity	Digester Type	Site Designation
Protacio dela Rosa	Catmon	25 grow-finish	Tubular 1.1 m	Demonstration
MPC	Catmon	70 grow-finish	Tubular 2.2 m	Demonstration
Marisa dela Rosa	Catmon	4 sow - farrow-finish	Stacked Fixed Dome	Support Site
Angelo San Diego	Catmon	30 grow-finish	Stacked Fixed Dome	Support Site
Angelito Mendoza	Pandi	10 Sow-farrow-finish	Tubular 2.2 m	Demonstration
Maritess Sta Ana	Pandi	135 grow-finish	Tubular 2.2 m	Demonstration
Rowena Cajaline	Pandi	40 grow-finish	Tubular	Demonstration
Andres Dela Pena	Pandi	20 grow	Fixed Dome	Support Site

The tubular AD system diameters chosen for each site were based on:

- Hydraulic retention time (HRT), limited to 30-35 days;
- Loading rates of up to 30-35 lbs. VS; and
- Length to width ratio where at least a 5:1 ratio is maintained to avoid washout.

The calculations were determined by the daily waste volume, daily organic load, and daily process water volume. In completing these calculations specifications for waste volumes and organic loading were based upon high energy feed regimens for various pig types and process water use of about 1 gallon/pig/day in the Philippine context.

Not all workshop attendees have been exposed to stacked and fixed dome AD systems so a fixed dome site could be included in the workshop as these systems are appropriate for application with rolling and steep terrain found at some site locations. While tubular systems cost less in flat terrain with high water

tables, fixed and stacked domes are more appropriate for rolling and steep terrains with low water tables.

Typical Workshop Outline and Duration

Previous GMI AD training workshops typically have been conducted over a four to five day period. The following information reflects average time needed for various parts of the training workshop based on past experiences.

Day 1: Introduction and discussion following the tubular AD training module where fundamentals, design, sizing, gas handling and gas use system are covered.

Day 2: Demonstration site visits and continuation of discussion where attendees are introduced to the fabrication and installation of the tubular AD system.

Day 3: In the field where the attendees fabricate and install the system including gas lines, pressure regulators, gas meters, and gas use system such as a cook stove.

Day 4: Continuation of the installation and system start-up with enough stable substrate from existing lagoons and ponds to create a methanogenic environment at all workshop support sites.

Day 5: Workshop wrap-up, discussion and next steps. This day also includes a competency exam, either group or individual.

Materials and Equipment

Tubular AD systems use geo-textile materials which are not fabricated locally and have been shipped to the country in the past. The contractor shall provide information about suppliers, costs and general availability of these materials in the workshop master plan. Site development also requires other materials which are locally available. The materials are mostly concrete and concrete related products. The contractor shall provide a list of these materials in the workshop master plan.

The workshop master plan may also cover roles and responsibilities for various entities involved in a training workshop. In past workshops, the GMI delegates, cooperatives, and site owners have agreed to provide the necessary:

- Supplemental labor such as masons, carpenters, laborers
- Other equipment such as tractors and screens; and
- The biogas pipeline from digester to the point of gas use.

A site technical lead is usually designated to provide oversight and manage the installation with this group.

In the past, the workshop organizer has agreed to provide materials such as geo-textile, concrete, hollow block, geo-textile storage pond liner¹, cook stoves, small flow gas meters; and geo-textile fabrication equipment such as welders and rods among other equipment. This approach provides

¹ The 20 mil HDPE or LDPE liner is available in Manila. Mr. Reymer Martinez can assist in the ordering of this and other locally available materials.

leveraging and demonstrates project commitment by workshop counterparts. Table 2 lists all material and equipment that has been used for previous workshops but is not available in metro-Manila

Item	# of Units	Length
Geo-textile welding and Lyster Sets	3 Sets with Case	na
Welding Rods	Enough for 300 Units	na
Cook Stoves	20	na
Small flow gas meter	25	na
1.1 meter dia. 40 mil LLDPE	na	3,000 meters
2.2 meter dia. 40 mil LLDPE	na	1,000 meters
Fyrite Gas Analyzers with methane and carbon dioxide detection liquids	9	na
20 mil HDPE flat sheet for storage pond liner	na	500 meters
Portable effluent pump suitable to mix and pump accumulated sludge from the bottom of the TADT used for servicing.	4	na

Appendix 2: Additional Considerations for the Covered Lagoon AD Technology Module

Workshop Phases and Timeline

Installing covered lagoon AD systems requires more time than tubular AD systems (due to scale). For practical purposes this workshop could be divided into the following phases:

- **Phase 1:** covered lagoon AD design and installation including sizing, excavation, inlet and outlet, soil compaction, liners, draw-down tubes, gas take-off, cover design and installation, pressure regulation and other ancillary equipment associated with the lagoon, gas transfer and cover components;
- **Phase II:** Design and installation of the gas handling and transmission components; and
- **Phase III:** Design and installation of the gas use and metering components.

These phases could be conducted over a 30 to 60 day period where each workshop phase is conducted over a 4 to 5 day period. Depending on unforeseen circumstances such as unexpected delays, equipment failure, weather, or other circumstances a contingency plan shall be included in the work plan in the event it is required.

The contractor shall be responsible for developing technical materials and logistics plans for all phases of such a workshop. The contractor shall also be responsible for developing an appropriate competency exam.

Covered Lagoon AD Training Module Development

The covered lagoon AD module has not been developed and shall be provided by the contractor under this task. This module shall be comprehensive but practical, and specifically tailored for each technical area identified in the phases above and technical sections such as:

- Chapter 1:* Covered lagoon AD system introduction
- Chapter 2:* Covered lagoon AD system sizing
- Chapter 3:* Covered lagoon AD system design (side slopes, bottom, and anchoring)
- Chapter 4:* Excavation, slopes, whaling control, and soil requirements
- Chapter 5:* Liner installation and testing
- Chapter 6:* Sludge management and processing options such as drying beds
- Chapter 7:* Filling, start-up and operational tasks such as charging, leak checks, daily system checks, record keeping, routine maintenance, and other key functions
- Chapter 8:* Cover and gas take-off design, installation, and testing
- Chapter 9:* Water, wind, and other stress management requirements
- Chapter 10:* Gas handling, transmission, metering and gas analysis
- Chapter 11:* Gas use options (engines, flares, thermal conversion, and other)
- Chapter 12:* Safety, and problem diagnosis.
- Chapter 13:* Geo-membrane testing and acceptance

These modules may be configured or combined differently, or other elements added as needed. Other appropriate and credible reference and support materials shall also be included in the CAL module as needed such as fyrite gas testing procedures.

Workshop Arrangement

As with Task 1, sample roles and responsibilities should be included in the workshop master plan. Sample roles and responsibilities include:

Farm:

- Provide all material, labor and equipment to complete the covered lagoon AD system and other processes such as lift station, sludge decantation pit, effluent storage lagoon and other processes of the waste management system plan.
- Provide the labor, equipment, and material to fabricate the flare.
- Provide access to the farm to implement the workshop and construct an operational covered lagoon AD system.
- Provide covered lagoon AD system cost and operational data.

Workshop Organizer:

- Follow all bio-security requirements of the farm.
- Provide construction supervision and oversight during all installation phases with the labor and equipment provided by the farm. These key sequences follow the phases outlined above.
- Provide an appropriate flare that the farm can replicate. Previously, GMI has provided three low cost replicable flares in the Philippines.
- Provide a gas meter, monitoring and record keeping instruction for reporting under the terms *CDM Program of Activities*.
- Provide one fyrite (Bacharach) gas analyzer and liquids to measure methane, carbon dioxide, and oxygen concentration in the biogas.

Appendix 3: Previous GMI Deliverables

The table below provides a list of previous deliverables for tubular AD systems and the technical design of Diamond Field Farm, which may be used in the development of materials under this Statement of Work.

Tubular AD System Documents		
Document Name	Document Type	Brief Explanation
1.5 Tubular	1.5 TADT drawing	Technical Drawing
2.2 Tubular	2.2 TADT drawing	Technical drawing
Sample Exam Dome by Kurt Roos	Sample Dome Exam	Exam for Fixed Domes
Philippine M2M Swine Digester Sizing Model	Digester Sizing Model	Sizing, energy, and methane estimator for tropical pigs
Stacked Fixed Dome and Mixer	Technical Drawings of small scale ADT's	Technical Drawings of small scale ADT's
Thailand Tube English	TADT Module	TADT module
Tubular Digester by Baklod Unlad	TADT Fabrication for Shipping	TADT Fabrication for Shipping
Installation of Pilot 2.2 Digester	TADT installation	TADT installation pictures
Covered Lagoon AD Technology and Diamond Field Farm		
Document Name	Document Type	Brief Explanation
Diamond Farm Technical Plan	CAL Technical Plan	CAL Technical Plan
Diamond Farm Materials List	Material List	Geo-textile material estimate
Flare at Night	Flare	Appropriate flare and scale
Diamond Farm Lagoon Design	Lagoon Design	Detailed Lagoon design for Diamond
GMI Covered Lagoons	CAL Technology Modules	There are 5 parts as Part 1 GMI Covered Lagoon.ppt etc.

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1

7

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 04/10/2015		2. CONTRACT NO. (If any) EP-BPA-12-H-0031		6. SHIP TO: a. NAME OF CONSIGNEE US Environmental Protection Agency	
3. ORDER NO. EP-B15H-00078		4. REQUISITION/REFERENCE NO. PR-OAR-14-01829		b. STREET ADDRESS U.S. EPA/OAR/OAP/CCD 1200 Pennsylvania Avenue, N. W. Mail Code: 62104J OAP/CCD	
5. ISSUING OFFICE (Address correspondence to) HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460		c. CITY Washington		d. STATE DC	e. ZIP CODE 20460
7. TO: DICKRAN BABIGIAN		f. SHIP VIA			
a. NAME OF CONTRACTOR EASTERN RESEARCH GROUP, INC.		8. TYPE OF ORDER			
b. COMPANY NAME		<input type="checkbox"/> a. PURCHASE REFERENCE YOUR:		<input checked="" type="checkbox"/> b. DELIVERY Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
c. STREET ADDRESS 110 HARTWELL AVENUE (b)(4)		Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.			
d. CITY LEXINGTON		e. STATE MA	f. ZIP CODE 024213136		
9. ACCOUNTING AND APPROPRIATION DATA See Schedule		10. REQUISITIONING OFFICE OAR			

11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input type="checkbox"/> a. SMALL <input checked="" type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM <input type="checkbox"/> h. EDWOSB				12. F.O.B. POINT Destination	
13. PLACE OF a. INSPECTION Destination		b. ACCEPTANCE Destination		14. GOVERNMENT B/L NO.	
				15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	
				16. DISCOUNT TERMS	

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	GSA Contract #: GS-23F-0225M DUNS Number: (b)(4) Call Order Title: Global Methane Initiative's (GMI) Municipal Wastewater 2014: Technical Support and Training Continued ...					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
	21. MAIL INVOICE TO:						
	a. NAME RTP Finance Center						\$0.00
	b. STREET ADDRESS (or P.O. Box) US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts						
c. CITY Durham				d. STATE NC	e. ZIP CODE 27711	\$52,012.00	17(i) GRAND TOTAL

22. UNITED STATES OF

AMERICA BY (Signature)

04/10/2015

ELECTRONIC
SIGNATURE

23. NAME (Typed)

Rayna Brown

TITLE: CONTRACTING/ORDERING OFFICER

ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION

PAGE NO
2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 04/10/2015	CONTRACT NO. EP-BPA-12-H-0031	ORDER NO. EP-B15H-00078
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	<p>This call order hereby incorporates the GSA contract no. GS-23F-0225M and Blanket Purchase Agreement (BPA) no. EP-BPA-12-H-0031 terms and condition by reference.</p> <p>The BPA Vendor shall perform in accordance with the attached Statement of Work (4 pages) and the accepted technical and cost proposal dated August 29, 2014 in the amount of \$52,012.00 (pre-priced based on the award of tasks 2, 5, and 6).</p> <p>This is a Time-and-Material (T&M) call order with a pre-priced total ceiling price of \$52,012.00, which the Vendor is not authorized to exceed. The Vendor exceeds at its own risk.</p> <p>The total obligated ceiling amount for this order is \$52,012.00. This order is hereby fully funded.</p> <p>Administrative Contracting Officer (CO): Faye Sas (202) 564-2669 sas.faye@epa.gov</p> <p>Contracting Officer's Representative (COR): Chris Love (202) 343-9795 love.chris@epa.gov</p> <p>Henry Ferland (202) 343-9330 ferland.henry@epa.gov</p> <p>Any travel under this order shall be approved in advance by the Contracting Officer's Representative (COR) or the Contracting Officer. All travel (domestic and international) shall comply with the Federal Travel Regulations (FTR).</p> <p>The Vendor is not authorized to incur any expenditures related to other direct costs Continued ...</p>					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$0.00

ORDER FOR SUPPLIES OR SERVICES

SCHEDULE - CONTINUATION

PAGE NO

3

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER	CONTRACT NO.	ORDER NO.
04/10/2015	EP-BPA-12-H-0031	EP-B15H-00078

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	<p>(ODCs), which totaled (inclusive of all tasks) \$23,868.00. The Vendor shall provide a cost breakdown for the proposed ODCs by April 17, 2015 for Contracting Officer approval.</p> <p>This call order is for non-severable services.</p> <p>The BPA Vendor hereby acknowledges and accepts this order by signing and dating below:</p> <p>_____</p> <p>Print Name and Title</p> <p>_____</p> <p>Signature</p> <p>_____</p> <p>Date</p> <p>Admin Office:</p> <p> HPOD</p> <p> US Environmental Protection Agency</p> <p> Ariel Rios Building</p> <p> 1200 Pennsylvania Avenue, N. W.</p> <p> Mail Code: 3803R</p> <p> Washington DC 20460</p> <p>Accounting Info:</p> <p>14-15-B-58F4-101A46XP4-2505-1458FC4858-001</p> <p>BFY: 14 EFY: 15 Fund: B Budget Org: 58F4</p> <p>Program (PRC): 101A46XP4 Budget (BOC): 2505</p> <p>DCN - Line ID: 1458FC4858-001</p> <p>Period of Performance: 04/10/2015 to 02/07/2016</p>					
0001	<p>Pre-Priced Services (Labor and Other Direct Costs (ODC))</p> <p>Time-and-Materials (T&M)</p> <p>Estimated Labor: \$28,144.00</p> <p>Estimated ODCs: \$23,868.00</p> <p>The obligated amount of award: \$52,012.00.</p> <p>The total for this award is shown in box 17(i).</p>					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$0.00

STATEMENT OF WORK

Contract Number: EP-BPA-12-H-0031

Call Number: EP-B15H-00078

Title: Global Methane Initiative's (GMI) Municipal Wastewater 2014: Technical Support and Training (competitively awarded only tasks 2, 5, and 6 of the original full scope of work; awarded tasks are renumbered herein)

Contracting Officer's Representative (COR):

Chris Godlove
(202) 343-9795
godlove.chris@epa.gov

Alternate COR:

Henry Ferland
(202) 343-9330
ferland.henry@epa.gov

I. BACKGROUND

In 2010, worldwide methane from wastewater accounted for more than 450 MtCO₂eq. Wastewater is the fifth largest source of anthropogenic methane emissions, contributing approximately 4 percent of total global methane emissions in 2010.

Methane is emitted both incidentally and deliberately during the handling and treatment of municipal wastewater through the anaerobic decomposition of organic material. Many GMI developing country partners are focused on closing their wastewater treatment gap in the coming decades. Decisions taken today related to treatment process and technologies will impact the sector's emissions for many years to come. Developing countries today rely largely on low-cost anaerobic treatment such as lagoons, septic systems and latrines. Even when centralized systems do exist, the resulting biosolids are often land applied or disposed of in landfills, often resulting in uncontrolled methane emissions.

During the first phase of GMI supported technical assistance and capacity building, GMI effort was concentrated on analysis of emissions from the municipal wastewater sector in Mexico. A resource assessment, characterizing methane emissions from the municipal wastewater sector was developed, putting emissions at 4.7 MGCO₂e per year in 2012 (*Resource Assessment attached*). This effort was accompanied by a capacity building training activity developed in partnership with Mexican partners SEMARNAT, CONAGUA, INECC and USAID/MLED

< <http://www.mledprogram.org/documentos/potencial-de-reduccion-de-emisiones-de-metano-y-aprovechamiento-del-gas-metano-en-plantas-de-tratamiento-de-aguas-residuales-domesticas-en-mexico.html> >. Pre-feasibility studies were also developed to assess the technical and financial feasibility of biogas recovery at select wastewater treatment plants (*Pre-feasibility study attached*).

In addition to having aggressive climate goals (see: *National Climate Change Strategy, 10-20-40 Vision*), Mexico is now focused on energy reform measures which are expected to pave the way to increased uptake in renewable energy power generation.

In this second phase of work, the overall objective of the task order is to create and deliver technical support and outreach activities that will lead to a reduction in methane emissions from municipal wastewater operations in Mexico, a long-standing GMI partner country. Activities developed focused on this sector in Mexico may be used as models to explore opportunities for mitigation in other GMI partner countries in future activities.

The contractor will have access to the Global Methane Initiative's (GMI) CRM software, Salesforce. This software offers a dynamic database that can be directly linked to the website so that changes to the database are automatically reflected. Each task should include contractor support to update the CRM database as appropriate for each task.

II. SPECIFIC TASKS

TASK 1: TOOL DEVELOPMENT (TASK 2 UNDER ORIGINAL SOW BEFORE SPLIT AWARD)

This task falls under the Blanket Purchase Agreement (BPA) statement of work (SOW) Task 1.2.3. Technical and Analytical Support (Support for technical and economic feasibility models and other analytical tool development and maintenance).

In an effort to support sound technical evaluation of methane mitigation and recovery projects in the wastewater sector, the contractor will support EPA in the development of **an international biogas evaluation tool (beta version)** for the municipal wastewater sector. The purpose of this tool will be to assist stakeholders involved in the evaluation of a biogas recovery project, by providing them with a "go/no-go" model that can support the decision making process.

Other GMI sectors have developed modeling tools designed to support a similar decision making process. This tool should rely on simple user inputs, will be Microsoft Excel based, and should permit the initial assessment of power generation at WWTPs based on specific treatment processes and estimated flow rates.

The ultimate goal will be to develop an interactive tool that facilitates the project development process and allows for users to assess opportunities based on a set of pre-determined parameters and specific user inputs. During this first phase of work, a beta version of the tool will be developed and comments and feedback on the tool will be solicited from select stakeholders and wastewater sector practitioners.

Deliverable	Milestones
Development of a beta version of an interactive WW	The contractor will develop an initial memo to the COR describing the scope and focus of the tool including required inputs,

biogas modeling tool designed to assess opportunities based on a set of pre-determined parameters and specific user inputs.	expected outputs, as well as formatting and structure. Following the receipt of comments from the COR the contractor will develop a draft version for evaluation by the COR. Upon integration of COR comments, the model will be prepared and posted to the web for limited release to select GMI partners as a beta-version. Comments and input will be collected from GMI partners and will then be incorporated into the model.
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TASK 2: INTERNATIONAL EXPERTS TRAVEL SUPPORT (TASK 5 UNDER ORIGINAL SOW BEFORE SPLIT AWARD)

This task falls under the Blanket Purchase Agreement (BPA) statement of work (SOW) Task 1.2.4. Technology Transfer Support (Technical Workshops).

As a component of GMI's international outreach activities, the GMI wastewater sector has committed to supporting the development and implementation of a workshop in coordination with the Water Environment Federation (WEF) as part of the *WEF / International Water Association (IWA) Residuals and Biosolids Conference 2015: The Next Generation of Science, Technology, and Management*, June 7-10, 2015 in Washington, DC.

As part of its support for this workshop, the contractor will coordinate and cover costs associated with the participation of EPA COR identified municipal wastewater / energy recovery experts. This will include the participation of two and possibly three experts total. It is expected that one expert will travel from Mexico City and one from either Brazil and/or Chile.

Deliverable	Due Date
Technical experts participation in GMI one-day workshop in Washington, DC	Upon receiving direction from the COR the contractor will work with the identified expert to coordinate their travel arrangements to participate in this one-day workshop.

TASK 3: MANAGEMENT (TASK 6 UNDER ORIGINAL SOW BEFORE SPLIT AWARD)

This task falls under the Blanket Purchase Agreement (BPA) statement of work (SOW) Task 1.2.6. Tracking Support.

The Contractor shall submit a Monthly Progress Report to EPA's Contracting Officer Representative (COR) and Contracting Officer (CO). During the Period of Performance, the Contractor shall immediately inform the COR and CO by telephone and/or email of any issue(s) that may impede performance along with any corrective actions needed by the EPA or the Contractor to address the issue(s).

Under this task, the Contractor shall also attend a general or task specific kick-off meeting, either via conference call or in-person, whichever is most cost effective to the Government, to discuss the goals, strategy, and schedule for completing the deliverables. The contractor shall discuss the format of the Monthly Progress Report, including more detailed budget tracking, and propose a progress report template to the EPA COR and CO for approval. The Contractor, under this task, will also attend a wrap-up meeting at the end of the Period of Performance.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 3	
2. AMENDMENT/MODIFICATION NO. 001		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO. See Schedule	
5. PROJECT NO. (If applicable)		6. ISSUED BY HPOD		7. ADMINISTERED BY (If other than Item 6)	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460		8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE 7816747200 LEXINGTON MA 024213136		9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11) 10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BFA-12-H-0031 EP-B15H-00078 10B. DATED (SEE ITEM 13) 04/10/2015	
CODE (b)(4)		FACILITY CODE			

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
X	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☒ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

GSA Contract #: GS-23F-0225M

DUNS Number: (b)(4)


Call Order Title: Global Methane Initiative's (GMI) Municipal Wastewater 2014: Technical Support and Training

The purpose of this modification is to change the accounting information under the subject call order. Funding in the amount of \$20,000.00 is de-obligated from DCN 1458FC4858, and funding in the amount of \$20,000.00 is re-obligated from DCN 1558FC5543. The total call order ceiling price of \$52,012.00 has not changed. All other terms and conditions remain unchanged.

LIST OF CHANGES:

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Jeffrey Martin	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 05/12/2015

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	EP-BPA-12-H-0031/EP-B15H-00078/001	2	3

NAME OF OFFEROR OR CONTRACTOR
EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Reason for Modification : Other Administrative Action</p> <p>Contracting Officer changed from Rayna Brown</p> <p>to Jeffrey Martin</p> <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>CHANGES FOR ACCOUNTING CODE: 14-15-B-58F4-101A46XP4-2505-1458FC4858-001 Amount changed from \$52,012.00 to \$32,012.00 - \$20,000.00 Percent changed from 100 to 61.54733</p> <p>NEW ACCOUNTING CODE ADDED: Account code: 15-16-BR-58F0X13-101A46-2505-1558FC5543-002 Beginning FiscalYear 15 Ending Fiscal Year 16 Fund (Appropriation) BR Budget Organization 58F0X13 Program (PRC) 101A46 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 1558FC5543-002 Quantity: 0 Amount: \$20,000.00 Percent: 38.45266 Subject To Funding: N Payment Address: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711</p> <p>Delivery Location Code: OAR/OAP/CCD OAR/OAP/CCD US Environmental Protection Agency 1200 Pennsylvania Avenue NW Mail Code: 62107J OAP/CCD Washington DC 20460 USA</p> <p>Continued ...</p>				

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED

EP-BPA-12-H-0031/EP-B15H-00078/001

PAGE

OF

3

3

NAME OF OFFEROR OR CONTRACTOR

EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 FOB: Destination Period of Performance: 04/10/2015 to 02/07/2016				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 002		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO.	
5. PROJECT NO. (If applicable)		6. ISSUED BY HPOD		7. ADMINISTERED BY (If other than Item 6)	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460		8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE (b)(4) LEXINGTON MA 024213136		9A. AMENDMENT OF SOLICITATION NO. 9B. DATED (SEE ITEM 11)	
CODE (b)(4)		FACILITY CODE		10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BFA-12-H-0031 EP-B15H-00078 10B. DATED (SEE ITEM 13) 04/10/2015	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: Mutual Agreement of the Parties
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not. ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

GSA Contract #: GS-23F-0225M

DUNS Number: (b)(4)

Call Order Title: Global Methane Initiative's (GMI) Municipal Wastewater 2014: Technical Support and Training

The purpose of this modification is to re-assign the role of Contracting Officer's Representative (COR) to Henry Ferland and the role of Alt COR to Thomas Frankiewicz for the duration of this call order. In addition, the period of performance of this call order is extended to 20 May 2016, at no cost to the government. All other terms and conditions remain unchanged.

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Faye Sas	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED 01/13/2016

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
EP-BPA-12-H-0031/EP-B15H-00078/002PAGE OF
2 2NAME OF OFFEROR OR CONTRACTOR
EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>COR: Henry Ferland ferland.henry@epa.gov 202.343.9330</p> <p>ALT COR: Thomas Frankiewicz frankiewicz.thomas@epa.gov 202.343.9232</p> <p>LIST OF CHANGES: Reason for Modification : Supplemental Agreement for work within scope Period Of Performance End Date changed from 07-FEB-16 to 20-MAY-16 Total Amount for this Modification: \$0.00</p> <p>Contracting Officer Representative changed from Chris Godlove to Henry Ferland</p> <p>Alternate COR/Project Officer changed to : Thomas Frankiewicz</p> <p>Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 04/10/2015 to 05/20/2016</p>				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		PAGE OF PAGES 1 3		
2. AMENDMENT/MODIFICATION NO. 003		3. EFFECTIVE DATE 04/28/2016		4. REQUISITION/PURCHASE REQ. NO. PR-OAR-15-01838		5. PROJECT NO. (If applicable)	
6. ISSUED BY HPOD		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE	
HPOD US Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N. W. Mail Code: 3803R Washington DC 20460							
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) EASTERN RESEARCH GROUP, INC. Attn: (b)(4) 110 HARTWELL AVENUE (b)(4) LEXINGTON MA 024213136		(X)		9A. AMENDMENT OF SOLICITATION NO.			
				9B. DATED (SEE ITEM 11)			
		X		10A. MODIFICATION OF CONTRACT/ORDER NO. EP-BFA-12-H-0031 EP-B15H-00078			
				10B. DATED (SEE ITEM 13) 04/10/2015			
CODE (b)(4)		FACILITY CODE					

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
X	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☒ is not. ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

GSA Contract #: GS-23F-0225M

DUNS Number: (b)(4)

Call Order Title: Global Methane Initiative's (GMI) Municipal Wastewater 2014: Technical Support and Training

The purpose of this modification is to change the line of accounting for an obligation in the amount of \$20,000.00 for this call order, from DCN 1558FC5543 to DCN 1558FC5787. The total dollar threshold for this call order remains the same at \$52,012.00. All other terms and conditions remain unchanged.

COR: Henry Ferland

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Faye Sas	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED 04/28/2016

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	EP-BPA-12-H-0031/EP-B15H-00078/003	2	3

NAME OF OFFEROR OR CONTRACTOR
EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>ferland.henry@epa.gov 202.343.9330</p> <p>ALT COR: Thomas Frankiewicz frankiewicz.thomas@epa.gov 202.343.9232</p> <p>LIST OF CHANGES: Reason for Modification : Funding Only Action Total Amount for this Modification: \$0.00 New Total Amount for this Version: \$52,012.00 New Total Amount for this Award: \$52,012.00 CHANGES FOR LINE ITEM NUMBER: 1</p> <p>NEW ACCOUNTING CODE ADDED: Account code: 15-16-B-58F4-101A46-2505-1558FC5787-001 Beginning FiscalYear 15 Ending Fiscal Year 16 Fund (Appropriation) B Budget Organization 58F4 Program (PRC) 101A46 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 1558FC5787-001 Quantity: 0 Amount: \$20,000.00 Percent: 0 Subject To Funding: N Payment Address: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711</p> <p>CHANGES FOR ACCOUNTING CODE: 15-16-BR-58FOX13-101A46-2505-1558FC5543-002 Amount changed from \$20,000.00 to \$0.00</p> <p>Delivery Location Code: OAR/OAP/CCD OAR/OAP/CCD US Environmental Protection Agency 1200 Pennsylvania Avenue NW Mail Code: 62107J OAP/CCD Continued ...</p>				

NAME OF OFFEROR OR CONTRACTOR
EASTERN RESEARCH GROUP, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Washington DC 20460 USA Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 FOB: Destination Period of Performance: 04/10/2015 to 05/20/2016				